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OBSTETRICS AND ANIMAL EXPERIMENTATION *

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Unfortunately, the relation between animal experimentation and obstetrics appears at first sight to be less direct and striking than in many other branches of medicine. Nevertheless, I consider that it can be demonstrated beyond peradventure that the greater part of the advances made during the past thirty-five years have resulted either directly or indirectly from research of this character.

The chief advances in obstetrics, in which animal experimentation has played a part, may be summarized as follows:

1. The recognition of the bacterial origin of puerperal infection, which has enabled us to prevent and overcome its former terrible mortality.
2. The application of aseptic technic to various obstetrical operations, thereby rendering comparatively harmless many procedures which were formerly murderous.
3. The recognition of the bacterial nature of certain infectious diseases of the newly born child, such as lockjaw and umbilical infections, which enables us to save each year the lives of thousands of infants, which under former conditions would have been lost.
4. The biologic study and standardization of certain drugs, such as ergot, whereby efficient preparations are available for the prevention and control of hemorrhage.
5. The demonstration of the internal secretion of the ovary, which has led to the therapeutic employment of ovarian tissue extracts, and to greatly increased conservatism in operations on the ovaries.
6. Experimental studies concerning the nature of the toxemias of pregnancy.
7. The experimental production of fetal deformities, which has led to a clearer conception of teratology, and the abandonment of the superstitious belief in maternal impressions.

1. *THE RECOGNITION OF THE BACTERIAL ORIGIN OF PUERPERAL FEVER*

Those not familiar with the older obstetrical literature scarcely realize the extent of the ravages of puerperal infection before the introduction of rigid antiseptic precautions in the conduct of labor, as well as the almost miraculous revolution which has followed their employment.

In this connection, I shall attempt to give some idea of the mortality attending puerperal infection in the past, and of the confusion regarding its nature. Then I shall refer to the part played by animal experimentation in the development of the bacteriology of wound infection and the establishment of aseptic technic, as well as the demonstration of the bacterial nature of puerperal infection, and finally I shall refer briefly to the revolutionary results which have followed the practical application of these principles.

In preantiseptic times puerperal fever ravaged the lying-in hospitals throughout the world, and each year caused the unnecessary death of thousands of women in the best years of life. How great the mortality was can best be appreciated by referring to the results obtained in the various civilized countries of the world, prior to the recognition of the etiologic rôle of the streptococcus.

PUERPERAL FEVER IN FRANCE

LeFort, in his railing accusation against the lying-in hospitals of France, which appeared in 1866, calculated that 30,394 deaths from puerperal fever had occurred in the 888,312 women delivered in the hospitals of Paris up to the year 1864—an incidence of 3.5 per cent., or one death to every 27.2 labors. Moreover, he stated that from 1860 to 1864, inclusive, the mortality in the Maternité of Paris was 12.4 per cent., which in December, 1864, rose to the colossal height of 57 per cent.; while in the Clinique it averaged 14.7 per cent. between the years 1833 and 1864, and on several occasions rose above 20 per cent. On the other hand, the mortality outside of the hospitals was much less, as only one woman perished out of every 212, which indicated that seven-eighths of the hospital deaths were due to conditions prevailing in them.

Such results were not limited to the past century, as Tenon in 1788 reported that the mortality at the Hôtel-Dieu for the fifteen years prior to 1786 was 6.4 per cent., and described almost inconceivable conditions of overcrowding and filth. Other observers described similar conditions. Thus, Charrier recorded a mortality of 7.5 per cent. at the Maternité in 1854, and Depaul one of 5.3 per cent. at the Clinique in 1856. Tarnier in his graduation thesis pointed out that 114 deaths from puerperal fever had occurred at the Maternité during the year 1856, an incidence of 5.1 per cent., as compared with 0.31 per cent. in the portion of the city immediately adjoining it.

Malgaine likewise studied the results in 14,197 and 99,911 women delivered respectively, in the hospitals and in the city of Paris during the years 1861 and 1862, and found a mortality of 8.2 and 0.56 per cent.; while

* This paper is one of the series prepared for and reprinted by the Bureau on Defense of Medical Research of the Council on Health and Public Instruction of the American Medical Association for circulation among the public. Twenty of these pamphlets are now ready, taking up the relations of animal experimentation to ethics, diagnosis, cancer, vaccination, the live stock industry, tuberculosis, typhoid, dysentery, plague, rabies, surgery, internal secretions, circulation of the blood, tropical diseases, syphilis, obstetrics, etc. A price-list will be sent on application. This article is abbreviated in THE JOURNAL. The pamphlet contains the complete article, including a long bibliography.

Quinquaud stated that 65 per cent. of all women delivered in the St. Antoine Hospital during the year 1869 were infected. Moreover, Delaunay in his recent history of the Maternité de Paris reports that the average mortality for the ten years ending with 1869 was 10.12 per cent., which rose as high as 18.43 per cent. in 1864.

Naturally, such results could not pass unnoticed, and the subject was frequently brought up for discussion. Thus, following a paper on puerperal fever by Guérard before the Académie de Médecine in 1858, a discussion arose which lasted for five months, which led to no definite conclusions, although participated in by the leading authorities in France. Similar discussions also occurred before the Académie in 1861 and 1862, the Société de Chirurgie in 1866, and the Société médicale des hôpitaux in 1869 and 1870. In all of them the most divergent views were expressed, some speakers holding that puerperal fever was contagious, and others that it was an unavoidable visitation of Providence. All sorts of theories were advanced in explanation of its origin, and it was attributed in turn to the peculiar characteristics of the parturient and puerperal woman, to hospital miasms and to the filthiness, faulty construction and ventilation of the hospitals; but not a word was said concerning the dirty hands of the obstetrician. Every suggestion was tested as soon as made, but still the mortality continued unchecked. Finally, in desperation it was suggested that the old lying-in hospitals be abandoned and be replaced by smaller ones, accommodating only a limited number of women, and that most women be cared for in their own homes or in small institutions conducted by specially appointed midwives. At the end of this period, the results had become so intolerable that it became the prevailing opinion that epidemics could be combated only by closing the lying-in hospitals, and such a drastic remedy was forcefully recommended at the International Congress held at Brussels in 1875.

The prevalence of puerperal fever had become a scandal, and, passing beyond purely medical circles, engaged the earnest attention of the Bureau of Public Assistance, whose able director, Husson, after thoroughly investigating the subject, was forced to admit that he saw no way of coping with it, and said:

> For the past sixty years the combined efforts of the administration and of the chiefs of service of health, have not been able to control the curse of puerperal fever, and up to this time the only palliative means of any effect in opposing the evil has been the momentary evacuation of the infected wards. The figures received from the various services of obstetrics still show a mortality high enough to call forth investigation, and to engage the friends of science and humanity to search in every possible way by what means it may be possible to arrest the progress of so terrible a malady, which up to the present time has disappointed all calculations.

It is interesting to note that the monumental work of LeFort, whose statistics are quoted above, was undertaken at the instigation of Husson; but, when the report was ready and showed so clearly the glaring conditions in France, the Bureau of Public Assistance would not allow it to be published under its auspices. The following quotation from Hervieux's immense work on puerperal infection, which appeared in 1870, will also serve to indicate the gravity of the situation:

> The puerperal epidemics are to woman what war is to man. Like war they destroy the most healthy, the bravest and the most useful portion of the population; like war they take subjects in the flower of their age and spread terror and desolation throughout the territory which they devastate. It belongs to politics to preserve us from the calamities of war, but to medicine is reserved the task of preventing and doing away with such epidemics.

PUERPERAL FEVER IN GERMANY

Conditions similar to those in France likewise obtained in Germany, but owing to the smaller size of its lying-in hospitals, the epidemics were usually not so extensive.

On behalf of the Berlin Obstetrical Society, Boehr in 1877 undertook to study the mortality from puerperal fever in Prussia, and found that in the sixty years ending with 1875 the appalling number of 363,624 women had died from it in that state alone. Moreover, he calculated that the disease was the cause of 12 per cent. of the total number of deaths occurring in both sexes between the ages 15 and 50 years which increased to 18.58 per cent. between the ages 25 and 30 years. Furthermore, assuming that each marriage would result in 4.2 children, he estimated that every thirtieth married woman in Prussia would eventually fall a victim to it.

Based on Boehr's work, and its own investigations, a committee of the society presented a *Denkschrift* to the minister of education, in which it was stated that many more persons died from puerperal fever than from cholera and small-pox combined, although sixteen epidemics of the former disease had occurred during the period covered by the statistics. For the protection of the public health, it was urged that the disease be made a "notifiable" one, so that steps could be taken to regulate the practice of midwives. Hegar made a similar study of the conditions in Baden and found that 0.732 per cent. of all labors ended fatally, one-half of the total number of deaths being due to puerperal fever.

The work of Boehr was continued by Ehlers in 1900, who found as the result of aseptic precautions that the mortality in the large cities had been reduced by one-half, but had remained practically unchanged in the country districts.

PUERPERAL FEVER IN GREAT BRITAIN

Epidemics of puerperal fever were reported in the eighteenth century by Hunter, Denman, Hulme, Leake, Kirkland, Clarke, White, Gordon and others, the most extensive being that recorded by White in the Lying-In Hospital of Manchester, where the mortality was 4.1 per cent. between the years 1755 and 1771. Owing to the comparatively small size of the lying-in hospitals of Great Britain, and particularly to the early recognition by English physicians of the contagious nature of puerperal fever and its relation to erysipelas, the epidemics were not so extensive and were less fatal than those on the continent; nevertheless, prior to the antiseptic period the results obtained were very discouraging. Until recently, the Rotunda Hospital in Dublin was the only large lying-in institution in the British Empire, and its results have been recorded by Churchill, Kennedy and Steele. The latter stated that in 198,481 labors, occurring up to the year 1870 the average mortality was 1.39 per cent., which rose to 3.27 per cent. between 1861 and 1870. He also reported that for the twenty-two years preceding and including 1876, the several London lying-in hospitals presented the following mortalities:

	Per cent.
Queen Charlotte Hospital	2.82
British Lying-In Hospital	1.57
General Lying-In Hospital	1.41
City of London Lying-In Hospital	1.35

Some idea of the seriousness with which the condition was regarded was shown by the appearance of an editorial in the *Lancet*, only a few weeks after the appearance of Lister's first article on antiseptic surgery, recommending the closing of all lying-in hospitals. Moreover, Kennedy in 1869 advocated evacuating the Rotunda Hospital in Dublin and delivering the women in tents or shacks scattered throughout its grounds; while Florence Nightingale considered that large lying-in hospitals could never be conducted safely and that their employment for the training of students was incompatible with a low death-rate.

Following a paper by Spencer Wells, the entire question of puerperal infection was thoroughly discussed before the London Obstetrical Society in 1875. All of the prominent obstetricians of the time took part in the discussion, and, while the most divergent views were expressed concerning its nature, the general consensus of opinion, well illustrated by the following quotation, was that lying-in hospitals had an inherent mortality which could probably never be overcome:

> There is only one secret of safety, and that is to have the woman confined at her own house where she can have her own nurse, who has not been anywhere in the way of infection, and her own medical man who is free from infection. Then the chances are that she will come on favorably and happy. Without that there is no security. The lying-in hospital is not now by any means so serious a matter as it used to be; still it is always like sitting on a volcano; it may explode at any moment (Barnes).

Furthermore, the general feeling of hoplessness was well expressed by Duncan, in his monograph on "The Mortality of Childbed," when he said:

> The disease may have its ravages restricted, but it is yet to be shown that it can be altogether prevented. It is in truth as little preventable as any disease in the nosology, or any crime in the statute-book. It is possibly preventable, but it has certainly never been prevented.

Even after the introduction of antiseptic methods, the views as to the undesirability of lying-in hospitals continued to persist in England; and as late as 1885 one of the sections in Playfair's text-book on midwifery was entitled "Should Lying-In Hospitals Be Abolished?" Indeed, the improvement in that country has been less marked than elsewhere; Cullingworth, after studying the statistics of the Registrar General's office for 1897, stated that the general mortality had shown no decrease, except as compared with the year 1843; Boxall reported a similar condition of affairs as late as 1905.

PUERPERAL FEVER IN THE UNITED STATES

That the United States was not spared in this regard is shown by the fact that Hodge reported a mortality of 5.6 per cent. in the Pennsylvania Hospital for the thirty years preceeding 1833. Lusk observed an epidemic in the Bellevue Hospital in 1872 with a mortality of 18 per cent., which led to the removal of the department to Blackwell's Island. But even there the infection continued until after the introduction of antiseptic methods. Similar results were observed in the New York Maternity Hospital, where Garrigues noted a mortality of 4.17 per cent. for the years 1875–1883, which in the latter year, just prior to the introduction of antiseptic methods, rose to 7.17 per cent.

VIEWS CONCERNING THE NATURE OF PUERPERAL FEVER

Sedillot stated in 1817 that puerperal fever was not a distinct disease, but rather an ordinary infection, which was modified by the puerperal state. It required, however, nearly seventy years before this doctrine became generally accepted.

The infectious nature of puerperal fever was first clearly emphasized by Gordon of Aberdeen, who based his conviction on seventy-seven cases observed during an epidemic in Aberdeen between the years 1789 and 1792. Among other things, in his forceful monograph, he wrote:

"It is a disagreeable declaration for me to mention that I myself was the means of carrying the infection to a great number of women"; and, in another place, "Fresh air and cleanliness are not sufficient for the destruction of the contagion, which can only be effected by fire and smoke."

Notwithstanding these clear-cut teachings, and the conclusive evidence which Gordon adduced in their support, the medical world was but little affected, and it was not until after the introduction of Listerian methods that such ideas became generally accepted. Similar views were forcibly and eloquently expressed in 1843 by Oliver Wendell Holmes in his monograph on "The Contagiousness of Puerperal Fever," which was reprinted with additions in 1855 under the title "Puerperal Fever as a Private Pestilence." His teachings, however, were opposed by Hodge and Meigs, the leading obstetricians of the day, and, while impressing many practitioners with the necessity of temporarily abstaining from obstetric work when several fever cases had occurred in their practice, they had no effect on the results obtained in lying-in hospitals. Kneeland expressed similar views in 1847, which met with the same fate.

The most important contribution to this aspect of the subject was made by Semmelweis in 1847, who, after carefully studying the causes underlying the horrible mortality in the lying-in hospital of Vienna, came to the conclusion that the disease was identical with wound infection, and was due to the contamination of patients by hands soiled by contact with autopsy material or wound secretions. Furthermore, he thought that its propagation could be checked by washing the hands in a solution of chlorinated lime, by which means he was able to reduce the mortality from 11.4 to 1.27 per cent.

Semmelweis' views concerning the nature and causation of puerperal fever were perfectly clear; and if, in the following quotation, one substitutes the words "pyogenic bacteria" for "decomposed animal organic material" his conception holds perfectly good at the present time. After stating that he regarded child-bed fever as a resorption fever, he continued:

> The decomposed animal organic material, which when absorbed causes child-bed fever, is in the vast majority of cases brought to the individual from without. These are the cases which represent child-bed fever epidemics, and these are the cases which can be prevented. The carrier of the decomposed animal organic material is the examining finger, the operating hand, bed-clothes, the atmospheric air, sponges, the hands of midwives and nurses which have been in contact with the excreta of seriously sick puerperal women or other ill persons and then handle parturient or recently delivered women. In a word, the carrier of the decomposed animal organic material is anything which has been contaminated by decomposed animal organic material and then comes in contact with the genitals of the individual. The area from which the decomposed animal organic material is absorbed is the internal surface of the uterus, extending upward from the internal os. As the result of pregnancy this has been robbed of its mucous membrane, and accordingly presents a surface which is unusually adapted for absorption.

In spite of these clear-cut views, his teachings were opposed by the leading authorities of Germany and France, and he died a disappointed man. He nevertheless prophesied that his views would eventually be universally accepted, and, in a postscript to his great work, wrote:

But should it not be vouchsafed me, which I hope God may prevent, to see this happy time with my own eyes, nevertheless the conviction that such a time must inevitably come sooner or later will cheer me in my dying hour.

Almost simultaneously with Semmelweis, Simpson insisted on the contagious nature of the disease and its identity with ordinary wound infection. More or less similar views were also expressed by Tarnier in 1856 and by Trousseau in 1858; but it was necessary for many years to elapse before they were accepted by the general mass of the profession.

A similar divergence of opinion continued until after 1875, when the discoveries of Lister and the bacterial origin of puerperal fever first began to be accepted. Prior to that time, the condition was generally considered as unavoidable, and was attributed to cosmic, atmospheric or telluric influences, to the genius epidemicus, imperfect ventilation and all sorts of other conditions; but, with the exception of a few far-seeing men, no one believed that it could be communicated from one patient to another by means of a dirty finger.

The teachings of Lister were introduced into France in 1875 by Championnière and Budin, and were popularized in Germany by a personal tour. Ahlfeld has given an interesting reminiscence of Lister's visit to Leipsic at that time, and has preserved a verse sung in his honor.

Just sind es jetzt fünf Jahre her,
Da drang die Kunde übers Meer;
Es lebt ein Mann in Edinburg,
Das sei ein eigener Chirurg,
In Karbolnebel eingehüllt,
Der rings die Luft mit Dünsten füllt,
Betriebe er mit aller Macht,
Die niedere Bakterienjagd . . .

Prior to that time only a few voices were raised in support of the bacterial nature of puerperal fever, and Lee and Sir Spencer Wells were practically alone in England in advocating it. Indeed, such views did not begin to receive general acceptance until after Pasteur had cultivated the streptococcus and demonstrated it before the Académie de Médecine de Paris, in March, 1879.

It is interesting to recall the fact that this demonstration was preceded by a paper by Hervieux, in which he said:

"I lay down the principle that the inferior organisms as yet known, vibrions, bacteria, batonnets and moving bodies, cannot possibly explain the production of puerperal septicemia," and concluded, "but I must confess that I have a terrible fear, a fear from which I am not able to rid myself, and which the academy will understand; and that is that I shall die before any one will have discovered that vibrion."

Immediately afterwards Pasteur arose and drew on the blackboard several chains of little dots, which he stated he had every reason to believe were its actual cause. This was the beginning, but many years of persistent investigation were required before the bacterial nature of puerperal infection was universally recognized.

THE DEVELOPMENT OF BACTERIOLOGY; AND RECOGNITION OF BACTERIAL ORIGIN OF PUERPERAL INFECTION

This is not the place to trace the history of the development of bacteriology in general, or even its application to wound infection. As far as I can learn, the relation of bacteria to infectious diseases, and the necessity of recourse to animal experimentation for its demonstration, was first clearly expressed by Henle in 1840. He prophesied that the "contagium" in infectious diseases must be a living organism, and laid down the following criteria, which must be fulfilled in order to prove such a relationship:

1. The constant presence of one and the same microorganism.
2. Its isolation.
3. The experimental study of the same by animal experimentation.

Following this, the development of bacteriology as applied to medicine was comparatively slow, and it was not until after the work of Pasteur on putrefaction, and the application of his ideas to surgery by Lister, that very considerable advances were made. Indeed, it may be said that extensive development along these lines was not possible until after Koch, by the discovery of solid culture media, had put into our hands a convenient method of isolating and cultivating bacteria. Almost immediately following this invention, the various bacteria concerned in ordinary wound infection were isolated and their pathogenic action demonstrated experimentally on animals. Aside from Pasteur and Koch, the greater part of this work was done by Ogston, Rosenbach, Passet, Garre and Fehleisen, and so convincing was their demonstration, that the information concerning the pyogenic cocci given in Baumgarten's "Handbuch der pathologischen Mycologie" in 1887 is almost as satisfactory as that available at the present time. Moreover, between the years 1884 and 1889, the work of Carle and Rattone, Nicolaier and Kitasato resulted in the isolation of the tetanus bacillus, and the conclusive experimental demonstration of its pathogenic action.

All of these discoveries were based on animal experimentation, and indeed it may be said that none of the important advances in bacteriology would have been possible without its aid. Occasionally, enthusiastic investigators, such as Bumm, Garre, Bockhart and Fehleisen, made experiments on their own persons, and thereby still further convinced themselves of the pathogenic properties of certain pyogenic bacteria.

Following the recognition of the bacteria concerned in the production of wound infection, it became possible to test the efficiency of the various antiseptics recommended for their destruction. It is particularly to Koch that we are indebted for the fundamental contribution to the doctrine of disinfection, and for the demonstration of the great value of bichlorid of mercury. Further investigation, however, gradually materially impaired our faith in the efficacy of antiseptics, and led to the development of aseptic surgery.

As far as I have been able to learn, Semmelweis in 1846 was the first to resort to animal experimentation in the hope of solving the problem of puerperal infection. He introduced into the freshly delivered uterus of animals, uterine discharges and peritoneal exudate from infected women, and in the majority of instances was able to produce a fatal infection. Animal experiments were also made by Tarnier, Mayrhofer, Coze and Feltz, Quinquad, Orth, Heiberg, Eberth, D'Espine, Kehrer, Karewsky, Miller, Pasteur and Doléris and many other later investigators.

Of these Mayrhofer, Coze and Feltz, Pasteur and Doléris deserve especial mention. The former in 1864 observed in the interior of the infected uterus, bacteria,

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which he described as vibrions, and by the injection into animals of lochia containing them was able to reproduce the disease. Coze and Feltz in 1869 apparently demonstrated the presence of streptococci in the blood of women dying from puerperal fever, and cultivated them in rudimentary fluid culture media. They also produced death in animals by their innoculation. As has already been mentioned, Pasteur was the first to describe clearly, and to cultivate the streptococcus from cases of puerperal infection, and together with his collaborator Doléris effectively demonstrated its etiologic significance.

Following Pasteur, it has gradually been demonstrated that, while the streptococcus is the organism most usually concerned in the production of fatal puerperal infections, all of the pyogenic bacteria, which play a part in ordinary wound infection, may likewise give rise to them. Scarcely any one who has busied himself with their study has failed to resort to animal experimentation, and none of the recent advances along this line would have been possible without its aid.

Listerian methods were not adopted in gynecology and obstetrics until after 1875, and for the succeeding few years the chief reliance was placed on the free use of phenol for disinfecting the hands and dressings and for use as a spray. Such precautions were soon carried to ridiculous extremes, and at the acme of the antiseptic period it was thought necessary to remove all furniture from the room in which a woman was to be confined, to scrub the walls and floors with a phenol solution and to have a nebulizer spray it on the external genitalia during the second stage of labor. At the same time, disinfection of the hands was slighted, as it was believed that their immersion in a phenol solution for a few moments was sufficient to render them absolutely sterile. As these precautions did not lead to the complete disappearance of puerperal infection, the attempt was made to destroy all bacteria in the birth canal by means of vaginal and intra-uterine douches of phenol solution, or of bichlorid of mercury, after its introduction in 1881.

With the gradual development of clearer ideas concerning the process of infection and the limitations of disinfection in general, the employment of antiseptic methods was gradually abandoned and its place taken by the aseptic technic which we now employ, in which less and less importance is attached to chemical disinfection and increasingly more weight laid on absolute subjective and objective cleanliness.

RESULTS FOLLOWING THE EMPLOYMENT OF ANTISEPTIC AND ASEPTIC TECHNIC

Following the introduction of antiseptic methods into obstetrics, there occurred a marked diminution in the death-rate from puerperal infection, which however, was nothing like so great as in the later or aseptic period. Thus, Dohrn analyzed the results obtained in 104,278 women delivered in forty-seven German lying-in institutions between the years 1874 and 1883 inclusive, and found an average mortality of 1.37 per cent. At the beginning of the period it was 1.73 per cent., and became reduced to 0.96 per cent. at its end. Moreover, it is interesting to note that the worst results were obtained in the institutions used for the instruction of students, while the best were in those not employed for teaching purposes, the mortality averaging 1.9 and 0.56 per cent., respectively.

When compared with the mortality of 3 or 4 per cent., which characterized the previous decade, the results were most encouraging; and Dohrn felt that they probably could not be improved on, as he stated that "the mortality in lying-in hospitals will never be lowered for any great length of time to the percentage prevailing in private practice; and, if we estimate the latter at 0.6 to 0.7 per cent., the institutional mortality would still be nearly double as high. The lying-in institutions have to contend with such unfavorable conditions that such results as in private practice would never be permanently possible."

Bar stated that, following the introduction of antiseptic methods in the Maternité of Paris, the mortality fell to 1 per cent. in 1873 and to 0.8 per cent. in 1882; while Tarnier has given a very graphic picture of the conditions in the same hospital. For this purpose he distinguished three periods; namely, from 1858 to 1869, from 1870 to 1880, and from 1881 to 1889, and designating the first as the period of inaction, the second as that of fight against contagion and the third as the antiseptic period, recorded a mortality of 9.31, 2.32 and 1.05 per cent., respectively. On the other hand, as many patients died as previously at the Clinique, where Depaul and Pajot, who did not believe in the bacterial nature of the disease, continued to use the old methods.

With the gradual development of aseptic technic and more rigid precautions for the prevention of infection, better and better results were obtained, so that Mermann in 1907 was able to report a septic mortality of only 0.08 per cent. in 8,700 patients delivered under his supervision in Mannheim. Pinard in 1909 recorded a net mortality of 0.15 per cent. in 45,633 deliveries in the Baudelocque Clinic during the eighteen years ending with 1908; while in the same year Markoe recorded a percentage of 0.34 in 60,000 women delivered by the Society of the New York Lying-in Hospital.

At the present time it is safe to say that in well-regulated hospitals the mortality from puerperal infection is less than 0.25 per cent. This is in great contrast with the average mortality of 3 to 4 per cent. observed throughout the world prior to the introduction of antiseptic methods, and means that only one woman now dies as compared with fifteen or twenty formerly. Moreover, the criterion of excellence in lying-in hospitals is now not so much the actual mortality as the morbidity of patients; namely, the percentage in whom the temperature rises to 38 C. or 100.4 F. during the first ten days of the puerperium.

This improvement is astounding, and at the present time it is safe to say that fewer deaths from infection occur in well-regulated lying-in institutions than in private practice, notwithstanding the fact that in the former the patients are freely used for clinical instruction. In this regard Dohrn and Florence Nightingale were poor prophets, as the former stated that such results would never be attained; while the latter held that hospitals could not be rid of puerperal infection as long as they were used for the instruction of students.

This revolution must be attributed to animal experimentation, which made possible the demonstration that definite bacteria are the cause of wound infection, and that one of its varieties—puerperal infection—is due to the introduction of pyogenic bacteria into the birth canal of parturient women, and can be prevented by appropriate means. Of course, it may be urged that far-seeing men, such as Gordon, Holmes, Semmelweis and Tarnier realized the contagious nature of puerperal fever long before bacteriology became a science. They were not, however, able to impress their belief on the profession, and consequently no improvement was

observed until the bacterial nature of the disease was clearly demonstrated. Formerly, the obstetrician groped in the dark in his attempt to identify the unknown contagion, if he even believed in its existence; while now we know exactly with what microorganisms we have to deal, and the means to adopt in order to overcome them.

At the present time, puerperal infection is no longer regarded as a visitation of Providence, but is attributed directly to the introduction of bacteria following a "break" in aseptic technic; and, whenever a case occurs in a well-regulated hospital, the director immediately begins to inquire how it happened, and, having found the source, is at once able to put a stop to further spread of the disease.

2. THE APPLICATION OF ASEPTIC TECHNIC TO OBSTETRIC OPERATIONS

The same factors which led to the disappearance of puerperal fever from lying-in hospitals and made possible the wonderful advances in general surgery, played an identical part in revolutionizing the results following the various operative procedures in obstetrics.

This is most strikingly illustrated by contrasting the results following Cesarean section and symphyseotomy or pubiotomy during the preantiseptic period and at the present time. Even as late as 1886, Dr. Robert Barnes wrote:

> The Cesarean section occupies a doubtful place between conservative and sacrificial midwifery. It is conservative in its design, in its ambition; it is too often sacrificial in fact. It is resorted to with a feeling akin to despair for the fate of the mother, which is scarcely tempered by the hope of rescuing the child. It is looked upon by the great majority of obstetricians as a last desperate resource, as the most forcible example of that kind of surgery which John Hunter regarded as the reproach of surgeons, being a confession that their art was baffled.

From 1787 until 1879, when Tarnier reported his first operation under antiseptic precautions, not a single successful Cesarean section had been performed in Paris; while Lusk, in the early eighties, was the first successful operator in New York. Indeed, as late as 1887, Harris stated that Cesarean section could be performed more safely by the horn of an infuriated bull than by the most accomplished surgeon in the best-equipped hospital in America. In support of this statement, he collected from the literature nine instances in which the abdomen of pregnant women had been ripped open by the horn of an infuriated bull, with five recoveries; whereas, only two mothers had survived the eleven Cesarean sections which had been performed in New York up to that time.

This horrible mortality was revolutionized by two factors: namely, the development of antiseptic surgery, and the description by Sänger in 1882 of a proper technic for suturing the uterine incision. The results following their adoption were so striking that Caruso was able to report that in 135 operations performed between the years 1882 and 1888, the mortality had been reduced to 25.56 per cent. Following the employment of more rigid technic and the proper selection of cases, this was gradually lowered, so that at the present time Cesarean section is undertaken by competent operators without hesitation.

When performed either in the last weeks of pregnancy or at the very beginning of labor, its mortality should not exceed that of ordinary gynecologic laparotomies, which is between 1 and 2 per cent. This striking revolution is due entirely to the development of aseptic surgical technic and to the restriction of the operation to uninfected women, who have not been subjected to the exhaustion incident to prolonged labor.

Exactly the same story can be told concerning symphyseotomy and pubiotomy. The former was first performed in 1777 by Sigault, and immediately afterward enjoyed a short-lived popularity, but soon gave such discouraging results that it was abandoned. Harris was able to collect reports of 70 cases up to 1858, with a maternal and a fetal mortality of 37 and 67 per cent., respectively.

The operation was resuscitated in Naples shortly afterward, and between 1866 and 1880, fifty operations were done, with a maternal mortality of 20 per cent. Following the introduction of antiseptic technic, it came into more general use, and Neugebauer in 1893 calculated that the mortality had fallen to 11.1 per cent.; while Mayer in 1908 stated that it had become still further reduced, but was still as high as 6 per cent. In view of the relatively high death-rate, and the more satisfactory results following Cesarean section, the operation gradually fell into desuetude, but was resuscitated again in 1897 under the form of pubiotomy.

Owing to the further development of aseptic technic, and the exact recognition of the character of cases susceptible to it, the mortality of pubiotomy has been kept within low limits, so that in May, 1910, I was able to collect from the literature reports of 518 operations performed by less than twenty operators, with a gross mortality of 1.9 per cent. In my clinic thirty odd pubiotomies have been done with no maternal deaths, while Roth has just reported eighty-five operations from Leopold's clinic with two deaths.

Similar improvement has occurred in the results following all other obstetric operations—forceps, version, induction of labor, *accouchement forcé*, etc. Unfortunately, it must be admitted that owing to the comparative immunity from danger there has developed a tendency on the part of many to resort unnecessarily to operative procedures, when Nature alone would have brought about a happy termination. Notwithstanding such tendencies, however, the general result is most creditable, and stands out in wonderful contrast to that of the past, and has each year been the means of saving the lives and diminishing the sufferings of thousands of women.

In this connection, one cannot reiterate too strongly that all of these advances must be traced back to the same cause, namely, the development of bacteriology and of aseptic surgical technic, both of which in turn are entirely dependent on the employment of animal experimentation.

3. THE RECOGNITION OF THE BACTERIAL NATURE OF CERTAIN INFECTIOUS DISEASES IN THE NEW-BORN CHILD

In times past, probably the most important disease of this group, occurring in lying-in hospitals, was the so-called puerperal fever of the new-born child. This condition, which was studied particularly by Schindler, Trousseau, Lorain, Hecker and Bühl, Müller and others, occurred particularly when the hospitals were ravaged by puerperal fever, and was due to the infection of the child during labor, or shortly afterward. In the first case, the amniotic fluid became infected during the course of a prolonged labor with concomitant infection of the air passages of the child with subsequent development of bronchopneumonia; while in the latter case, infection occurred through the stump of the umbilical cord. In either event, the disease was extremely fatal

and only a small proportion of the infected children escaped, while autopsy showed one or more of the protean manifestations of wound infection.

Some idea of its incidence may be gained from the fact that a mortality of 7.62 per cent. was observed in the 18,329 children delivered in the Vienna Hospital prior to the work of Semmelweis. Following the employment of the precautions against puerperal fever which he recommended, the fetal death-rate was so markedly reduced that Bednar, who had charge of the Foundling Asylum, stated "that the disease of the children [blood sepsis] had almost entirely disappeared in consequence." Lorain noted a similar connection in the Maternité of Paris and reported that in 2,567 labors occurring during the year 1854, 5.7 per cent of the mothers and 7.5 per cent. of the children were lost, and the high mortality continued until antiseptic precautions were introduced by Tarnier. Hugenberger, likewise, estimated that the average fetal mortality in the St. Petersburg Hospital was 2.6 per cent., which rose as high as 14 per cent. during puerperal fever epidemics; while Hecker and Bühl observed an even higher death rate.

At the present time this condition is observed but rarely, and then only in the case of women who are admitted to the hospital already infected, when the bacteria contained in the amniotic fluid gain access to the child and give rise to infection.

As long as epidemics of so-called fetal puerperal fever occurred, comparatively little attention was paid to the actual mode of infection, but with the subsidence of the disease, the question was more carefully studied. It was then found that the portal of entry was usually through the stump of the umbilical cord, and this type of infection persisted for several years after puerperal fever had practically disappeared from lying-in hospitals.

Occasionally it caused a terrible mortality, and Paquy refers to the experience of Meynet, who lost 17 per cent. of the children cared for in a crêche in Lyons. Moreover, Runge stated that he had observed a mortality of 4 per cent. in Strassburg, as well as nineteen deaths in the Charité in Berlin during the first six months of 1880. His investigations showed that the umbilical arteries were usually involved, while infection occurred only exceptionally through the vein.

Following the introduction of antiseptic methods in caring for the stump of the umbilical cord, this variety of infection rapidly disappeared, so that at present in well-regulated hospitals it occurs only once in many hundred cases. We now hold that the condition always results from bacterial invasion, which is usually streptococcic in character; and we are forced to attribute the great diminution in its occurrence to the recognition of its true nature, which was made possible only by the development of bacteriology, which is based on animal experimentation.

Formerly, large numbers of new-born children died each year from tetanus, and Collins stated that during his mastership at the Rotunda in Dublin, one-fifth of all children, dying within the first fortnight after delivery, perished from it. He also referred to the epidemics observed during the mastership of Dr. Clarke, who said "At the conclusion of the year 1782, of 17,650 infants born alive in the hospital, 2,944 died within the first fortnight, and nineteen out of twenty of these died of nine-day fits." This indicates a total fetal mortality of 16.6 per cent., of which 95 per cent. was due to tetanus. This epidemic was held in check by the greatest attention to ventilation and cleanliness, but that the disease was not entirely eradicated is shown by the experience of Collins forty or fifty years later.

Similar epidemics have also been noted in other parts of the world, one of the most remarkable having occurred in the Island of St. Kilda, and was described by Mitchell in 1865. In this epidemic, 67.2 per cent. of all new-born children died, and the horrible death-rate continued until antiseptic methods of caring for the cord were introduced, when Turner reported that dusting the stump with iodoform had led to its complete disappearance. Until comparatively recently, the negro race in the South was often decimated by tetanus neonatorum, and the extent of its ravages may be gained from the following quotation from Grier:

> We have known more than one instance in which, of the births for one year, one-half became the victims of this disease, and that, too, in spite of the utmost watchfulness and care on the part of both planter and physician. Other places are more fortunate, but all suffer more or less, and the planter who escapes a year without having to record a case of trismus nascentium may congratulate himself as being more favored than his neighbors, and prepare himself for his own allottment, which is surely and speedily to arrive.

Similar conditions likewise obtained in Jamaica, and as early as 1835 Maxwell reported:

> From observations I have made for a series of years, I found that the depopulating influence of trismus neonatorum was not less than 25 per cent. It scarcely has a parallel on the bills of mortality.

Prior to the isolation of the tetanus bacillus, the condition was attributed to filth and impure air, but with the recognition of its specific cause and the employment of aseptic methods in the treatment of the umbilical cord, it has practically disappeared, and in more than 10,000 newly born children under my supervision I have never encountered a case. This advance, just as all the others to which I have referred, must be attributed solely to the employment of animal experimentation, for without its aid the tetanus bacillus could not have been isolated, nor its characteristic pathogenic properties demonstrated.

4. *THE BIOLOGIC TESTING OF ERGOT*

This drug, which is now so freely employed throughout the civilized world for the control of postpartum hemorrhage by the stimulation of uterine contractions, was first described medically by Dr. John Stearns of Waterford, N. Y., in 1808; while we owe the first dissertation on its physiologic action to Prescott of Boston in 1822. Following this, its complicated constitution has given rise to almost countless investigations, and pharmacologists are not yet in agreement concerning its active principles.

Some of the most important contributions to the action of the drug we owe to Kobert, Jacoby, Grünfeld, Barger and Dale. Ever since its employment for medicinal purposes very conflicting statements have been made concerning its active principles and physiologic action, and it was not until after the careful studies of Grünfeld that the cause for the discrepancy was recognized. He found that the powdered drug rapidly lost its medicinal properties; and while a certain preparation might be very potent when first prepared, it so rapidly deteriorated as to be practically without physiologic effect after being kept for four or five months. The recognition of this fact led to the necessity of devising some method for testing the physiologic activity of the

various preparations of ergot before putting them on the market.

Unfortunately, no method of chemical analysis or assay has as yet been devised to enable manufacturing chemists or physiologists to determine the value of a given preparation, so resort was necessarily had to biologic or physiologic tests for the purpose. From the earliest times it had been noted that an efficient preparation would lead to marked bluing, and eventually to gangrene of the comb and wattles of the rooster; although later investigations tended to show that such a result was not necessarily an index of its action on the uterus, as it had been demonstrated that the gangrene-producing properties were quite independent of those causing uterine contraction. Consequently, other modes of investigation became necessary. Kurdinowski determined its physiologic activity by testing its effect on the isolated uterus, Kehrer, instead, used thin slices from the uterus of freshly killed pregnant animals, while Cronin and Henderson studied in animals its effect on the blood-pressure.

According to Crawford, most manufacturing chemists at the present time test its efficiency on the cock's comb and wattles; although he states that it would be preferable to employ the living uterus, as recommended by Kurdinowski and Kehrer. In any event the manufacturing chemist must resort to some such form of animal experimentation in testing every specimen of ergot which he uses for the manufacture of the preparations sold to the public; and that means that no woman can take ergot for the control of hemorrhage without being the recipient of at least one of the advantages which has been gained from animal experimentation.

5. THE DEMONSTRATION OF THE INTERNAL SECRETION OF THE OVARIES

Although the atrophic changes occurring in the internal genitalia following the menopause, or the operative removal of the ovaries, were long ago recognized, the possibility that they were a manifestation of the disappearance of an internal secretion, formerly elaborated in those organs, was not suspected until after the appearance of Brown-Séquard's suggestive article on the subject.

As long as such a supposition was not supported by facts capable of demonstration, it was not possible to be sure of its correctness, or to deny that the changes in question were neurotic in origin. The experimental work of Knauer, Gregoriff, Mandl and Bürger, Marshall and others, however, conclusively demonstrated that the ovaries elaborate a definite secretion, which serves to regulate the nutrition of the internal genitalia, as well as to exert a definite effect on the entire organism. Moreover, it was clearly shown that the organs could be removed from their usual site and transplanted to other distant portions of the body, and still prevent the degenerative changes which usually follow their removal. As all nervous connections had been severed at the time of operation, it was evident that the only manner in which such an influence could be exerted was by means of an internal secretion, which gained access to the blood-current.

Other experiments showed that the transplanted ovaries functioned perfectly, and if implanted in a suitable location, produced ova which could be fertilized. Such findings were not merely of scientific interest, but possessed a distinctly practical bearing in that they suggested the possibility of transplanting the ovaries in human beings, as well as the employment of ovarian tissue extract in the treatment of various conditions resulting from imperfect ovarian secretion, more particularly the distressing symptoms which frequently accompany the menopause or follow the removal of the ovaries. Not a few operators, when obliged to remove both tubes and ovaries on account of disease, have implanted healthy portions of the latter on the uterus or broad ligaments, in order to prevent the occurrence of an artificial menopause in young women. Less frequently, the ovaries of one woman have been implanted into another, in the hope of reestablishing the menstrual function, or even making possible the occurrence of pregnancy. The former result has been attained in numerous instances, while the latter has resulted successfully in at least two cases. Those who are interested in the subject are referred for details to Martin's article which contains full references to the literature up to 1908.

Fraenkel, in 1903 and 1910, published two important contributions on the function of the ovaries, which were based entirely on animal experimentation. He apparently showed that the corpus luteum should be regarded as a temporary gland which produçes an internal secretion, whose function, at least in part, is to bring about the changes in the internal genitalia necessary to permit the implantation of the fertilized ovum. Furthermore, his experiments rendered it probable that the continuance of the secretion was essential for the preservation of pregnancy during its early periods, but was not necessary later; and thus afforded an explanation for the clinical observation that removal of the ovaries early in pregnancy is usually followed by abortion, whereas their removal later has no effect.

6. EXPERIMENTAL STUDIES CONCERNING THE NATURE OF THE TOXEMIAS OF PREGNANCY

Up to twenty years ago our ideas concerning the nature and etiology of eclampsia were but little clearer than in 1843, when Lever first described the presence of albumin in the urine of eclamptic women, and held on that account that it was merely a variety of nephritis.

Following the experiments of Rivière in 1888, and those of Tarnier and Chamberlent a few years later, in which it was apparently shown that the toxicity of the urine of eclamptic women was greatly decreased for experimental animals, while that of the blood-serum was markedly augmented, the belief gained ground that the condition was toxemic in character, and was due to the retention within the organism of certain substances which were ordinarily excreted through the kidneys. Following these observations, the experimental study of eclampsia has occupied the attention of large numbers of investigators, and although the subject has not yet been thoroughly elucidated, the conviction is growing stronger and stronger each year that the disease is a toxemia, which is in some way dependent on the pregnancy, and in all probability connected with abnormal processes either within the body of the fetus or placenta.

It would carry us too far afield to attempt even to enumerate those who have taken part in such investigations, but the contributions of Volhard, Veit, Hofbauer, Lichtenstein, Freund, and Thies deserve especial mention. Moreover, we might refer, in this connection, to the fact that it is only by means of animal experimentation that we have learned the part which the secretion of the thyroid gland plays in regulating the metabolism of pregnancy.

Although none of these experimental investigations have entirely cleared up the etiology of the affection,

they have nevertheless served to impress on us its toxemic nature, and have taught us that the treatment *par excellence* consists in the prompt evacuation of the uterus. Moreover, I consider that if the matter is ever to be settled, it can only be accomplished by the aid of animal and biochemical experimentation.

7. THE EXPERIMENTAL PRODUCTION OF FETAL DEFORMITIES

If it is permissible to designate as animal experimentation the various procedures to which the fertilized eggs and the developing embryos of various animals are subjected for the purpose of producing anomalies of development, we can point to a field which has not only markedly advanced our knowledge concerning the normal mechanism of growth and the mode of production of monstrosities, but one which is destined to add greatly to the comfort of the human race.

In times past, the birth of monsters or of children afflicted with congenital deformities was attributed to the anger of the gods, to witchcraft or to some malign influence to which the pregnant woman had been subjected. With the advance of knowledge and the passing of superstition, such views gradually disappeared; but, on the other hand there is scarcely a woman in America at the present time, who does not firmly believe in the doctrine of maternal impressions, and who, in case of the birth of a monstrous or deformed child, will not attempt to trace its origin to some unpleasant sight or experience to which she had been exposed during pregnancy.

Persistence in the belief in maternal impressions is each year a source of great unhappiness to thousands of women, who, after some trivial occurrence, such as seeing a mouse or a rabbit, are convinced that their child will be "mouse-marked" or hare-lipped in consequence, and who do not dismiss their fears until a perfectly normal and well-formed child has been born. Indeed, I feel that I am safe in stating that no one who has not considerable experience with pregnant women can appreciate the extent of the suffering and dread resulting from this superstition.

The new science of experimental embryology and teratology has shown clearly that such an occurrence is impossible, as in the vast majority of cases, the changes which were attributed to it developed in the earliest periods of pregnancy, whereas the "maternal impression" to which a given deformity was attributed did not occur until a much later date.

Geoffroy Saint-Hilaire, Allen Thompson and Féré were the first investigators to attempt the production of deformities by subjecting the developing egg to various influences, but it is only within the last twenty-five years that the matter has seriously engaged the attention of scientific men. During this period, however, the work of Pflüger, Dareste, Roux and Born has put the subject on a scientific basis, as they have shown beyond question that pricking certain portions of the segmenting ovum with a needle, encircling it with a ligature, or subjecting it to certain chemical influences, will inevitably be followed by definite deformities, and they were enabled in this way to produce at will, not only single, but double monsters of the most varied type.

Further research along these lines has been particularly prolific in this country, and the investigations of Loeb, Morgan, Wilson, Bardeen, Harrison, Stockard and many others, has led to most astounding results, which have revolutionized our ideas of teratology. These investigators have shown beyond peradventure that practically all of the deformities with which we meet at the time of labor can be produced at will by subjecting the early ovum or embryo to various procedures. Thus, it is possible to produce spina bifida, cyclops, headless or double monsters, as well as those lacking extremities or having accessory ones, merely by changing the experimental conditions.

As the result of these investigations, it has been definitely proved that, with the exception of certain well-marked hereditary deformities, the great majority of monsters are the result of some interference with the normal growth of the ovum in the days immediately following conception, and not to later influences.

Indeed, at the present time the evidence available seems to indicate that the entire doctrine of maternal impressions is a superstition which will sooner or later entirely disappear, and this result will be hastened as the work of the experimental teratologist becomes generally known.

CONCLUSION

In conclusion, it may be said that while the benefits which obstetrics have derived from animal experimentation are not immediately apparent, they are nevertheless very real, and have led to revolutions in obstetric practice and to results which are but little realized by the general public. I think that I am safe in asserting that had animal experimentation led to nothing more than the discovery of the bacterial nature of puerperal fever, whereby a means was provided for doing away with its former hideous mortality, it would abundantly justify the sacrifice of all the animals which have thus far been used for experimental purposes. Think of the millions of lives which have been saved, if we accept Boehr's calculation, that formerly every thirtieth married woman was inevitably doomed to perish from puerperal infection. Fortunately, this is not the only benefit even in obstetrics, which can be ascribed to animal experimentation, as the increased security following operations and the marked decrease in the mortality of new-born children are equally attributable to it. Indeed, it may be truthfully said that every time a physician cleanses his hands preparatory to attending a woman in labor, he is rendering a tribute to animal experimentation; although unfortunately, the world at large, which benefits from it, does not recognize its significance. I feel that there is every reason to expect that animal experimentation will play as large a part in developing our ideas in the future as in the past, and I confidently believe that the problem of eclampsia and the other toxemias of pregnancy, as well as the cause of labor and all that that implies, will eventually be solved by its means.

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Prognosis in Neurasthenia with Gastralgia.—The prognosis is largely one of neurasthenia itself. Remove the cause and the associated gastric pain and disturbance will gradually disappear. No patient with neurasthenia is rapidly cured. Even the all-potent mental effect on the patient of the inspiring personality of doctor or nurse, or the firework impressions of electrical treatment, such as high-frequency, however much they may conduce to the patient regaining hopefulness of cure, cannot result in a rapid recovery. The disease is a slow undermining and weakening of neurons and the cure is a gradual reconstruction and strengthening, which are greatly aided, it is true, if the sufferer can be persuaded that he is on the way toward health once again.—R. A. Fleming, in the *Practitioner*.

TREATMENT OF STUTTERING

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As "stutterers" we designate individuals showing certain peculiarities of speech. One stutterer, for example, will make spasmodic contraction of the lips, tongue, etc., whereby a word like "berry" will be pronounced "b-b-b-berry." Another will open his mouth wide and produce an "a-a-a-a-" before he can say a word. Another will find himself suddenly unable to speak at all at the beginning or in the middle of something he wants to say. Still others are quite unable to speak certain words; one young man could never speak the name of his town and was obliged always to buy his railway ticket to the next town beyond; one lady would find herself at a ticket office suddenly speechless and unable to tell what ticket she wanted, while an impatient crowd of commuters gathered behind her.

"Stuttering" is sometimes called "stammering"; the words in English mean exactly the same thing. The word "stammer" is superfluous; it should be avoided because it leads to confusion with the German word *Stammeln*, which means lisping, and not stuttering.

Laryngeal cramps are a never-failing symptom of stuttering. The muscles in and around the larynx become tense and fixed. The tone from the larynx is always monotonous and hard, and it is often husky. It is not unusual to find a patient who never has any other symptom in the presence of the physician except the monotonous laryngeal tone. This most fundamental of all the symptoms of stuttering seems to have escaped all writers on the subject.

Cramps and spasms of the muscles of enunciation (lips and tongue) are the ones most apparent to the observer. The lips may be pressed tightly together for a short or a long time when the patient tries to say "p" or "b." In other cases they will open and shut, producing a series of "p"s or "b"s instead of one. The tongue may be pressed so tightly against the palate that the "t" or the "d" is two, three or ten times too long. All the sounds may be similarly affected.

Less frequent, but more striking, are the contractions of muscles not usually used in speech. One patient will twist his head whenever he stutters badly; another will screw up one eye; another will contort his whole body, etc.

An almost constant symptom is excessive rapidity of speech. In some cases this is to be attributed to the desire of the stutterer to get his words out before he is caught, or before any one can interrupt him. In most cases it is the expression of nervous anxiety.

A never-failing symptom is the patient's lack of confidence in his ability to speak correctly. In some cases the mere thought "Shall I be able to say that word?" is sufficient to make it absolutely impossible for the person to say it. The stutterer always lives with the fear that his speech may "go back on him." Many a one is always thinking a few words ahead of what he is saying, being on the lookout for some word he thinks he cannot say. When such a word is coming, he avoids it by selecting another that will serve just as well. One patient passed his life, practically, in always avoiding words; this mental work added to that of a normal man kept him in a condition of nervous prostration.

The simplest form of stuttering is that of "pure habit." Such a case occurs rather frequently in instances in which a younger child unintentionally copies the stuttering of an older one. If the stuttering does not go beyond the stage of pure habit, the younger child drops his stuttering involuntarily when the older one is removed or cured.

The stutterer nearly always goes beyond the habit stage. People laugh at him, mock him, scold him, threaten him with punishments, or whip him. Usually he is obliged to repeat words he stumbles on. He is made to go through reading and speaking exercises. Extra hard words are given him to practice on. Speaking becomes a torture for him. A new element, the "fear of displeasing and of appearing ridiculous," produces the "fright stage." The stuttering is now a distinct psychoneurosis that may have the most far-reaching consequences.

The curative treatment of stuttering is based on the following principles:

The "principle of a new method of speaking" is founded on two facts; first, that the stutterer always speaks in an abnormal voice, which we may call the "stutter voice"; and, second, that he does not stutter when he expresses his ideas in any other voice, such as the singing voice.

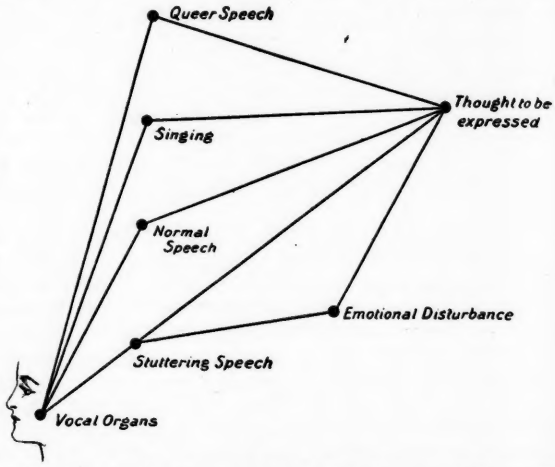

Diagram showing how emotional disturbances interfere with attempts at normal speech, and how singing or the employment of an unnatural voice—queer speech—overcomes the difficulty and the person does not stutter, because the attention is distracted by the attempt to sing or employ queer speech.

The scheme shown in the illustration expresses these two facts. When the stutterer tries to express a thought in his usual way, the action of his speech is interfered with by the emotional condition—embarrassment or fear—that is aroused at the same time. He, therefore, speaks in his stutter voice. If he tries to express the thought in any other way than the usual one, the emotional disturbance does not arise. This explains the familiar fact that a stutterer never has any trouble when he sings what he wants to say.

Since the patient does not stutter if he speaks in his usual way, he can be taught to speak in some kind of an odd voice. The stutterer can at any time speak without stuttering, if he will use an abnormally low voice, or an abnormally high one, or if he will drawl the vowels or slur the consonants, or again if he will speak in a choppy staccato voice, and so on. These are the methods of the "stammer-schools" and "stutter-curers." They are objectionable because they leave the patient with a queer voice; people often tell him that the cure is worse than

the disease. The patient usually gives up the queer voice after a while and becomes a stutterer again because the queer voice itself produces embarrassment and he naturally feels like discarding it.

The essential point is that the stutterer should feel his acquired speaking voice to be different from his stuttering voice. One patient could never dictate to his stenographer. I found that he could not distinguish one note from another in music; so I told him to sing what he wanted to dictate. He did so without the slightest hesitation or difficulty, in what he supposed to be a singing voice; it did not differ, however, from his usual voice, except in being slightly easier and more natural. As long as he thought he was singing he did not stutter, although he did not really sing. The cure was a failure because he refused "to make a fool of himself by singing to his stenographer." To inform him of the fact that he did not sing would have destroyed the belief that he was singing and would have made him a stutterer again. There was no way out of the dilemma.

There is another way of speaking which is unusual to the stutterer, namely, the way in which normal persons speak. When he speaks in this way, he does not and cannot stutter. The therapeutic procedure on this principle will, therefore, be to teach him to speak normally. The various abnormalities will disappear when the patient has thoroughly learned the exercises below.

The "principle of habit-formation" implies that the new way of speaking is to be drilled into the patient till it becomes a habit.

The "principle of spontaneity" is requisite because, when the patient has learned to repeat perfectly, he will still be unable to do so when he speaks of his own accord. A gradually increasing amount of spontaneous speech is introduced into the treatment.

The "principle of increasing embarrassment" arises from the fact that, even when the patient has learned to speak perfectly in the presence of the physician or the instructor, he is unable to do so under other circumstances. The patient is taught to speak properly before a few persons or before a class. Still more difficulty is introduced by making introductions, speaking over the telephone, buying in stores, reciting in school, etc. For the introduction exercise the stutterer practices at first privately and then with a gradually increasing number of strangers.

The "principle of correct thinking" indicates that the abnormal habits of thought, which a stutterer always acquires to a greater or less degree, are to be corrected by appropriate exercises. A frequent abnormality is that of getting into a daze at each effort to think. The patient finds that he cannot decide promptly. It was typical of one patient that on being asked "Which kind of dog do you like best?" he hesitated and grunted, and finally said, "I really cannot say which I like best." He was cured by being obliged to give some kind of decision quickly, regardless of whether it was correct or not. The trouble was due to the mental flurry or daze that had become a habit. Another patient, when leaving a house, found himself unable to say "Good-bye" because some friends were waiting for him. The trouble arose from a conflict between the motive to hurry after the friends and the motive of not offending the host; this produced a mental daze that left the patient speechless.

The following exercises present an outline of treatment that may be abbreviated as desired. Each step of each exercise is to be repeated a number of times. The exercises are to be repeated as often as may be needed.

EXERCISE I. BREATHING IN PREPARATION FOR SPEECH

A. The patient raises the arms fore upward inhaling and lowers them side downward exhaling. He repeats this and each of the following at least four times.

B. He raises the arms side upward inhaling, and lowers them side downward singing "ah."

C. Likewise with the other vowels.

D. The patient raises the arms upward inhaling; lowers them side downward singing "ah" on middle C and upper C (over the octave).

E. Likewise singing words of one syllable.

The object of this exercise is to develop consciousness of breathing and to form a habit. It also teaches the "octave twist."

EXERCISE II. FLEXIBILITY

A. The patient sings the vowel "ah" on each note of the octave.

B. He strikes the lowest note of the octave and then the highest; sings the vowel "ah" half on the lowest note, half on the highest.

C. He sings the vowel continuously (*portamento*) up the octave. He should note the "fog-horn" effect, the "octave twist."

D. He practices singing the different vowels up the octave in this way.

E. He sings a series of words with long vowels, running the vowels up in the same way.

F. The instructor speaks a word with the octave twist. The patient repeats it.

G. Same with a sentence, putting the octave twist on the first important vowel.

H. Same with a poem, putting the octave twist on the first important vowel in each line.

I. Same with prose, putting the octave twist on the first important vowel in each phrase.

J. The instructor speaks sentences and questions with the octave twist. The patient repeats the sentences and answers the questions.

The object of this exercise is to break up the hard monotonous laryngeal tone. It alone makes the voice normal when it is skilfully done, because it is impossible to stutter and to use the octave twist at the same time.

EXERCISE III. READJUSTING THE VOWELS

A. The patient speaks each of the vowels in a long drawn out tone, going over the octave, e. g. "a-h, o-h, etc."

B. He speaks a short sentence, omitting all the consonants but lengthening the vowels; for example, the sentence "A snow storm is here" will be spoken "A- o- or- i- ere-."

C. He repeats the same sentence, lengthening the vowels and putting in the consonants only faintly.

D. He learns to read and converse in this way.

The object is to teach the patient to weaken the consonants and to speak slowly.

EXERCISE IV. SMOOTHNESS

A. Repeat sentences making every important vowel at least three times as long as usual. These vowels should be spoken with the octave twist. The words are to be linked together, that is, there are to be no pauses or interruptions. The method may be indicated in this way: "Thesu---nisshi---ningbri---ghtly."

B. Questions and answers and short sentences are to be spoken and read likewise.

The object of this exercise is to teach the patient to shorten the consonants, as these are the sounds that cause him difficulty. At the same time it teaches him to speak smoothly and easily. These are factors in forming a voice that is both normal and new.

EXERCISE V. SLOWNESS

With a metronome beating fifty-four times a minute, the instructor and patient read, repeat sentences, ask and answer questions, etc., putting one syllable on each beat. A breath is to be taken before each sentence; all the vowels are to be lengthened and the consonants to be weakened, as described in the preceding exercise. The first important vowel in each phrase is to have the octave twist as described in Exercise II. The whole sentence must be spoken smoothly and softly without the slightest jerkiness. The object is to force the patient to speak slowly.

EXERCISE VI. REGULATION OF BREATH IN SPEAKING

The instructor and the patient are to hold sticks. Each time before speaking, the stick is to be raised sharply while breath is taken vigorously. After waiting one second with bated breath, the person speaks.

A. The instructor speaks a short sentence; the patient repeats it.

B. The instructor asks a question; the patient answers it.

C. The instructor assigns a topic on which the patient is to say something. The patient must raise the baton and draw breath before each statement.

D. The patient is required to give a description of some object in the room in a similar way.

This exercise is needed only when the patient has difficulty in breathing before each sentence.

EXERCISE VII. STARTING A SENTENCE

A. The patient sings short sentences, striking a note on the piano as the first syllable is sung. Instead of using the piano, he may strike a bell or a table or hit his knee or make a gesture as in beating time.

B. He repeats the same sentences, with the same accompaniment in the same way, but singing only the first word.

C. He speaks them with the same accompaniment on the first syllable.

D. Question and answer are sung with the accompaniment on the first syllable.

E. As before, but only the first syllable is sung, the rest being spoken.

F. As before, but all spoken.

G. The patient tells a story, singing the first word of each sentence with the accompaniment.

H. He tells a story without singing but accompanying each first syllable.

This exercise is needed only when the patient has special difficulty in starting. The accompaniment is to be gradually eliminated.

EXERCISE VIII. DEVELOPING EXPRESSION

A. The instructor repeats some poem with expression; the patient repeats it line by line, exactly imitating the expression.

B. The instructor states a certain fact in a very melodious and expressive way; the patient repeats it exactly.

C. The instructor gives a question as in B; the patient repeats it exactly.

D. The instructor gives a question in a very melodious and expressive voice; the patient answers it by taking a few words from the question.

E. The instructor gives a question as before; the patient answers freely, but with the same melody and expression as in the question.

F. Poems and prose pieces are recited with proper expression.

G. Dialogues are read with the proper change of expression for each character.

H. Jokes are read and spoken with an effort to give the most effective expression.

During these exercises no correction of faults is to be made. The entire attention is to be concentrated on the correct expression

EXERCISE IX. CONFIDENCE IN READING

A. The instructor and the patient are to read poems together. Then they are to read alternate lines together and alone.

B. Same with sentences.

C. They are to read a prose speech together, but the instructor is to remain silent occasionally.

D. The patient is to read a prose piece, but the instructor is to join in at the first intimation of difficulty.

E. The patient and the instructor are to read sentences and questions from a traveler's manual, sometimes together, sometimes alone.

F. The instructor and the patient are to read parts in a drama, the instructor joining in whenever the patient has difficulty.

G. The patient is to read a paragraph and then tell its contents in his own language.

EXERCISE X. CONFIDENCE IN SPEAKING

A. The patient calls out railroad stations with a megaphone; the voice must be clear and decided.

B. Same without the megaphone.

C. The patient makes geographical statements with and without the megaphone; for example, "The Atlantic Ocean is east of the United States."

D. He makes historical statements likewise (that is, with and without the megaphone); for example, "George Washington was the first president of the United States."

E. Question and answer likewise.

F. The patient relates a story or an incident likewise.

G. He makes a speech likewise.

H. He takes part in a debate likewise.

I. He takes part in a continuous story which is arranged as follows: One person tells a story which he makes up as he goes along; he suddenly stops and the next person is immediately to continue the story according to his own ideas; he, in turn, suddenly stops and the following person continues. This is kept up until the story reaches the first person.

J. A topic is assigned; the patient prepares a short speech to make on it and delivers it in the presence of the instructor.

K. Same in the presence of several people.

L. A speech is made impromptu on a given topic in the presence of the instructor.

M. Same in the presence of other people.

The number of the people is to be gradually increased until the patient feels ready to get up at any moment and make a short speech on any topic.

EXERCISE XI. CONFIDENCE IN BUYING

A. The patient with a number of objects before him is supposed to be a store-keeper; other people (or patients) go to the store, inquire about articles, discuss the prices and buy. This must all be done with proper attention to slowness and melody of speech.

B. The patient takes the part of the buyer.

C. The store is turned into a railroad ticket office with the patient alternately as ticket agent and as traveler. Various questions concerning trains, accommodations, etc., are to be asked.

D. The ticket office becomes the box office at the theatre; the questions are to include location and seats, exchange of tickets, etc.

E. When the patient can do this perfectly, the instructor accompanies him on actual purchasing expeditions to the stores.

EXERCISE XII. SCENES FROM LIFE

A. A group of people is supposed to be in some familiar situation; for example, eating at a restaurant, riding in an automobile, forming a box party at the theatre, etc. The instructor works out the situation by description, while all persons present, including the patient, make the appropriate remarks. For example, if the scene is at the restaurant, the instructor takes the part of the waiter while the other persons order what they wish to eat, discuss the bill of fare, etc. If the scene is at the theater, the instructor tells a story of the

play while the persons discuss the incident, the house, their neighbors, etc. In the automobile party, the instructor takes the part of the chauffeur while the party travels to various places and discusses what has been seen.

B. Similar scenes are worked out, the patient taking the leading parts.

C. The group of persons is supposed to represent a club, the instructor occupying the chair. Various members are to make motions and discuss them, officers are to be elected, etc.

D. The patient is made chairman of the club.

EXERCISE XIII. SPONTANEOUS SPEECH

A. The patient says some word referring to an object placed before him pointed out; the word must have some application to or connection with the object. For example, concerning a book, he may say "large" referring to its size, or "black" referring to its color, or "read" referring to its use, or "table" referring to its position, or "yesterday" referring to something it reminded him of, etc.

B. He makes a statement slowly and melodiously concerning some object placed before him or pointed out to him.

C. He names the objects he sees on one side of the room, proceeding systematically from left to right and speaking slowly and melodiously.

D. He describes an object placed in front of him, using single words and proceeding systematically; for example, if a telephone is placed before him he will first use words referring to its appearance, then to its use, then to its faults, then to its history, etc. He should always adopt some such system in selecting words.

E. Same as D, but complete sentences are to be used instead of single words.

F. Short sentences are to be spoken concerning objects not seen but more or less familiar; for example, breakfast, a distant city, George Washington, Atlantic Ocean, etc.

G. A more extended account is required concerning similar objects as in F.

H. Some or all of the preceding exercises are to be carried out in the presence of additional people.

I. When this can be done perfectly, the patient is to be called on to make short speeches on any topics that may be given him.

J. He is to make speeches on topics of his own choosing.

The object of this exercise is to remove the daze—mental cramp—which many stutterers have when they begin to speak.

EXERCISE XIV. THINKING

A. The name of an object is called out. The patient calls out the name of some other object that suggests itself to his mind. If he is in doubt what to say, he chooses some object that is often seen together with the one mentioned. For example, on hearing the word "horse" he replies "cart." This process is called "association of ideas." For the present the patient is to associate deliberately, taking as much time as he wishes. He practices for several times with words like the following:

hand,	foot,	hair
shoe,	glove,	eye
coat,	sock,	motor

B. On hearing each of the words just used, the patient makes a sentence about it. It does not matter what the sentence states.

C. On hearing each of the words he makes a sentence defining it.

D. On hearing each of the words, he states some fact about the object implying something regarding its location or its use, or something that preceded it, or caused it, or followed it, or resulted from it, or had some relation to it.

E. Starting with any given word he lets the mind bring up a long series of thoughts. These thoughts should not revolve around the original word, but should pass away to other subjects. If necessary the rule may be adopted of obliging the mind to leave the original word within three associations.

The object is the same as in the preceding exercise.

EXERCISE XV. TELEPHONING

A. The patient calls some one on a private telephone, using the system of his town as nearly as possible. He first calls Central and then speaks with the person desired. He is to speak slowly and melodiously.

B. He takes the part of Central and then of the person called up.

C. He repeats A and B in the presence of other people.

D. He does some of the most difficult exercises over the private telephone with the instructor or some other person at the other end.

E. Using the public telephone, the patient puts his finger on the switch so that when he takes the receiver off the hook, the telephone is not connected with Central. Some one sitting beside him takes the parts of Central and the person to whom the patient wishes to speak. He carries out exercises as on the private line.

F. With the instructor close beside him, the patient calls up Central and then some friends; if he has the slightest hesitation the instructor will speak for him.

G. When he succeeds perfectly in the preceding, he tries the telephone independently. The instructor is to criticize his successes.

The fear of the telephone is very marked in most stutterers.

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THE DIAGNOSTIC VALUE OF THE BUTYRIC ACID TEST (NOGUCHI) IN THE CEREBROSPINAL FLUID*

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Of the large number of reports on the cerebrospinal fluid which have appeared in recent times, the great majority have been devoted to a study of changes which occur in the parasyphilitic diseases, and perhaps not sufficient attention has been paid to the value of routine diagnostic examinations in general hospital practice. Realizing the importance of establishing certain fundamental facts in relation to the newer tests, at the Michael Reese Hospital we attempted to study in a routine manner all the spinal fluids which came to our laboratory for diagnosis, and in this study especial attention has been paid to determining the status of the butyric acid globulin test devised by Noguchi.[1] Noguchi originally advocated his test for use in the diagnosis of cerebrospinal syphilis, general paresis, and of tabes dorsalis, but suggested that inasmuch as it is present in all inflammations of the meninges, it might prove of value in the diagnosis of tuberculous meningitis. The material on which this report is based has come from varied sources, and includes diseases of varied character. Over 150 cases have been studied; but, since many of our cases were from sources which prevented us from following them, this report is based on the ninety cases in which a diagnosis is fairly certain. I regret, however, that the inability to obtain autopsies is a source of error in the interpretation of disagreements between the clinical diagnosis and the findings of the laboratory examination. Furthermore, the series is rather small for very definite conclusions, but the general agreement in our

* From the laboratories of the Michael Reese Hospital, Chicago.

1. Noguchi and Moore: The Butyric Acid Test for Syphilis in the Diagnosis of Metasyphilitic and Other Nervous Disorders, Jour. Exper. Med., 1909, xi, 604.

results is sufficiently striking and suggestive to warrant their publication with the hope that more workers in this field will be able to study larger numbers of cases and thus contribute more definite knowledge.

Although the technical methods employed in all our cases have been constant, the different character of the fluids made it advisable for practical purposes to adopt certain standards of procedure varying with the source of the fluid. For instance, better results are obtained when the spinal fluid from a patient suspected to have tuberculous meningitis is handled in a manner to facilitate the finding of tubercle bacilli, whereas, in those cases in which the examination may aid in the differential diagnosis between functional and organic nervous disorders, special stress is laid on chemical and cytologic aspects. In all cases, the first step employed is a bacteriologic culture on media containing hemoglobin. In cases of suspected tuberculous meningitis one tube of fluid is put untouched in the ice-box, and allowed to remain for at least twelve hours in order to permit the formation of the film which enmeshes the bacilli. As has been emphasized recently by Bybee and Lorenz,[2] practically all workers find the study of the cells most difficult, and no completely satisfactory method, either for the total or the differential count, has yet been devised. My experience with the total cell-count has been that the use of the ordinary red cell counting pipette with methylene-blue, gentian-violet or acetic acid gives results, which, while only partially satisfactory, are at least much better than those from the French method. The differential count is made from the sediment after centrifugalization for a half hour at about 1,800 revolutions, and stained with Wright's stain. In many instances, however, this procedure is eminently unreliable, as it is often impossible to differentiate the various cell types by this method. Far more valuable, in my experience, and much less difficult of interpretation, has been the use of some one of the methods for determining increased globulin content. In a recent careful review of the literature,[3] I found a fairly general agreement in the opinions expressed as to the relative diagnostic value of increased cell-count and increased globulin fraction. In normal fluids the number of cells present is from 0 to 5, 6, or even 8 per cu. mm., whereas the amount of protein is so small as to be unrecognizable by ordinary clinical methods. In all inflammations of the meninges, and in general paresis and tabes, there is an increase of the cells and of the protein. As a rule the increases in these two elements run parallel courses, and likewise the diagnostic significance of the tests is of about equal value. In my series the agreement was almost constant, but the two reactions were not always of equal value.

Numerous methods have been employed for the determination of increased protein, all based on the fact that the increase is due to serum globulin. In all tests the fluid must be free from blood. Nonne's[4] well-known Phase I has not been found to have the delicacy of some of the modifications, owing to frequent difficulties in differentiating a positive from a negative reaction. Ross and Jones[5] have modified the technic of procedure by making a ring test similar to Heller's nitric acid test in the urine. On two parts of a heat-saturated solution of ammonium sulphate in a test-tube they float one part of the fluid and look at the line of junction for the reaction. In positive cases an easily perceptible white line of precipitated globulin appears. Wherever it has been used, this reaction has met favor, and seems to possess about the same delicacy as the Noguchi test, with the possible exception that the line of junction is somewhat more difficult to read than is the Noguchi. This latter test, which is probably the most satisfactory at present, is employed as follows:

One part (0.1 or 0.2 c.c.) of cerebrospinal fluid is placed in a test-tube, and to this is added five parts of a 10 per cent. solution of pure butyric acid in physiologic salt solution; the mixture is heated to boiling, and immediately one part of normal sodium hydrate added and the mixture again boiled. In the presence of increased globulin a definite flocculent precipitate occurs, either immediately, or within two hours. This definite precipitate must be differentiated from a faint cloudiness which normal fluids may give, but it requires only slight experience to recognize the difference between positive and negative reactions.

Properly to appreciate the diagnostic value of the study of spinal fluids it is necessary to remember that the spinal fluid is, in a diagnostic sense, analogous to the blood, and, as in the blood only a few tests of absolute value are known, so in the interpretation of the examination of spinal fluid most of the knowledge obtained is relative. An increased leukocyte count or an eosinophilia is a pointer of importance only when considered in relation to the clinical findings, and practically the only absolute diagnostic signs are those obtained by finding the specific etiologic agent or one of the few specific bacterial or chemical reactions like the Widal or the Wassermann. In the spinal fluid not too much can be expected, and it is well before discussing our cases to emphasize that only in exactly similar instances can absolute determinations be reached. The finding of the tubercle bacillus or the pneumococcus, or a positive Wassermann are the occasional high lights in routine study of cerebrospinal fluids; a positive Noguchi reaction does not mean any one disease any more than does a leukocytosis mean pneumonia. If, however, it can be shown that the Noguchi reaction is not present in any of the functional neuroses or psychoses, while it is present in certain organic diseases whose symptomatology resembles that of the neuroses, then its value as a diagnostic sign must be recognized; or if it occurs in tuberculous meningitis and not in the numerous clinical entities which may simulate this disease in children, it must be admitted into the group of signs which help to make the diagnosis of tuberculous meningitis. It is from the standpoint of relative usefulness that we wish to present the subject, and in doing so it seems better to consider our cases under groups showing similar clinical manifestations.

The first group to be presented is that of cerebrospinal syphilis, general paresis, and tabes dorsalis. It would be a waste of time and space to review here the extensive literature on the changes in the spinal fluid in these diseases. Suffice it to say that the salient features are an increase in the globulin and in total cell-count in about 90 to 95 per cent. and peculiarities in the differential count involving mainly the mononuclears, about the classification of which there is considerable discussion. The figures for positive Wassermann reactions vary from 50 to 95 per cent. The Noguchi and the Ross-Jones

2. Bybee and Lorenz: A Report of Fifty Examinations of Cerebrospinal Fluids with Special Reference to the Cell-Count, Arch. Int. Med., 1911, vii, 38.

3. Strouse: The Cerebrospinal Fluid in Syphilis and in Parasyphilitic Diseases, Interstate Med. Jour., 1911, xviii, 138.

4. Nonne and Apelt: Ueber fractionirte Eiweiss-Ausfallung in der Spinalflüssigkeit von Gesunden, Luetikern, Funktionell- und Organischnervenkranken und über ihre Verwerthung zur Differentialdiagnose der Dementia Paralytica, Tabes Dorsalis, tertiaren und abgelaufenen Syphilis, Arch. f. Psychiat., 1907-08, xliii, 433.

5. Ross and Jones: The Use of Certain New Chemical Tests in the Diagnosis of General Paresis and Tabes, Brit. Med. Jour., 1909, i, 1111.

tests have proved of greater value than the original Nonne (Amsden,[6] McCampbell and Rowland[7]).

TABLE 1.—CELL FINDINGS AND REACTIONS IN CASES OF CEREBROSPINAL SYPHILIS, GENERAL PARESIS AND TABES DORSALIS

Case No.	Diagnosis	Noguchi	Cells	Wassermann C. S. F.	Wassermann Blood	Ross-Jones
1- 3	Cerebral syphilis	+	..	..	..	..
4-10	General paralysis	+	..	..	..	..
11	Cerebral syphilis	+	+	—	+	+
12	Cerebral syphilis	+	+	..	..	..
13	Tabes dorsalis	+	+	+	+	..
14	Tabes dorsalis	+	+	—	+	..
15, 16, 17	Same patient, tabes dorsalis	—	..	..	+	..
18-20	Tabes dorsalis	—	—	—	—	—
88	General paralysis (?). Cerebral arteriosclerosis (?)	—	—	—	—	—
21-23	Brain tumor	—	—	—	—	..
24-25	Dementia præcox	—	—	—	—	..
26-27	Cerebral arteriosclerosis	—	—	—	—	..
28	Pernicious anemia with spinal cord involvement	—	—	—	—	..

Table 1 shows our results in this group of cases. It will be seen that in five cases of cerebrospinal lues, and in seven of general paresis, the Noguchi was positive in all. Systematic study of the other reactions was not possible in this series. In two cases of tabes the Noguchi and the cell-count were positive in both, the Wassermann on the blood in both, and on the spinal fluid in one. In one other advanced case (15, 16, 17) of tabes, the Noguchi was negative on three successive occasions, whereas the Ross-Jones test was positive the only time it was tried, and the Wassermann on the blood was twice positive. Cases 18 to 20 were cases of undoubted tabes dorsalis, with typical histories, and at least some of the pathognomonic signs. One was an advanced case and the other two were incipient. In all three cases it is interesting to note the absence of changes in the spinal fluid as well as the negative Wassermann. In Case 88 the history was obscure and the physical findings not definite; the further course of the disease must settle the diagnosis.

In contrast to this series must be placed those cases in which exists the possibility of confusion with the conditions just discussed. In three cases of brain tumor, two of dementia præcox, two of cerebral arteriosclerosis the Noguchi was negative in all, the cell count normal in the four cases in which it was made, and the Wassermann negative on the blood in five. Of especial interest was the patient who presented cord symptoms of pernicious anemia which simulated very strongly those of tabes dorsalis, but whose spinal fluid and Wassermann were entirely negative. Our results in this series are distinctly in accord with those of other workers on the incidence of the butyric acid test in general paresis, cerebral lues, brain tumor and psychoses, but at marked variance in tabes dorsalis. Many more cases are necessary, however, before these few instances can be cited as evidence against Noguchi and Moore's original claim of 100 per cent. positive results.

As far as we are aware, no large series of cases has yet been reported in which advantage is taken of the ease and rapidity of the Noguchi reaction as an aid in the differential diagnosis between acute meningitis and other conditions whose clinical manifestations resemble those due to actual inflammation of the meninges. Apelt[8] has used the Nonne globulin test in differentiating meningitis from meningismus. In children, especially, the state of meningismus is often so pronounced as to puzzle the most able clinician, and not infrequently in the infectious diseases lumbar puncture is the only diagnostic means at our disposal for the solution of the problem. Later we wish to discuss in some detail the special value of the reaction in tuberculous meningitis.

TABLE 2.—ACUTE MENINGITIS AND MENINGISMUS

Case No.	Diagnosis	Noguchi	Cells	Bacteria
	ACUTE MENINGITIS			
29–31	Pneumococcus	+	P. M. N.	Pneumococcus
32–44	Meningococcus	+	"	Meningococcus
45	Streptococcus	+	"	Streptococcus
46	Influenza	+	"	Influenza
	MENINGISMUS			
47	Typhoid	—	—	—
48–52	Pneumonia	—	—	—
90	Pneumonia	—	—	—

In Table 2 can be seen the findings in three cases of pneumococcus meningitis, one of streptococcus and one of influenza meningitis, and in thirteen cases of cerebrospinal fever due to the meningococcus. In all of these, as might be expected from the great exudate of polymorphonuclear leukocytes, the Noguchi test is positive. In the six cases of meningismus occurring in pneumonia, and one in typhoid, the test is negative in all. Of course the clear fluid and the negative bacteriologic findings lead one to expect an absence of globulin, but as the same sort of fluid may be found in tuberculous meningitis, which in all our cases showed a positive Noguchi, it seems to us to have considerable value in these conditions.

Until quite recently, when more refined methods for finding the tubercle bacillus were introduced into the examination of spinal fluids, a definite diagnosis of tuberculous meningitis was always beset with more or less difficulty, especially in the early stages. No extended observations have been made on the globulin fraction in these cases. Our results have been constantly positive. Hemenway[9] has tried the test in a few cases with positive results.

TABLE 3.—TUBERCULOUS MENINGITIS

No.	Noguchi	T. B.	Cells
53	+	0	Lymphocytosis
54	+	0	Few lymphocytes
55	+	0	Few lymphocytes
56	+	0	Many lymphocytes
57	+	0	Many lymphocytes
58	+	0	Many lymphocytes
59	+	0	Many lymphocytes
60	+	+	Many lymphocytes
61	+	+	Many lymphocytes
62	+	+	—
63	+	+	Lymphocytosis
64	+	+	—
65	+	+	—
66	+	+	Lymphocytosis
67	+	+	Lymphocytosis
68	+	+	Lymphocytosis
69	+	+	—
81	+	+	Lymphocytosis

Table 3 shows positive Noguchi reactions in eighteen cases, in the first seven of which the diagnosis was verified by the further clinical course, or by autopsy, and in the last eleven by finding tubercle bacilli in the fluid. It is important to note that our first seven negative bacterial findings occurred when we were using the centrifuge method, while the last eleven positive cases were due to the change to the so-called film method. The technic of this method is so simple and the results so much more satisfactory than any other procedure, that it is advisable to review it in some detail. A tube of the clear or slightly turbid fluid, handled as little as possible, is immediately placed in the ice-chest and

6. Amsden: Report of Certain Lumbar Punctures at Bloomingdale Hospital, New York, Med. Jour., 1910, xci, 438.
7. McCampbell and Rowland: Studies on the Clinical Diagnosis of General Paralysis of the Insane, Jour. Med. Research, 1910, xxii, 169.
8. Apelt: Beiträge zur Frage der Berechtigung der spinalen und cerebralen Punktion, Berl. klin. Wchnschr., 1910, xlvii, 1540.
9. Hemenway: The Constant Presence of Tubercle Bacilli in the Cerebrospinal Fluid of Tuberculous Meningitis, Am. Jour. Dis. Child., 1911, i, 37.

allowed to remain there for twelve hours. Most workers put the tube in the incubator, but we have found no difference in results by using the ice-chest, and by its use we are safeguarded from bacterial growth due to accidental contamination—a point which must be considered when fluids come from various sources and are often subject to slightly careless manipulation. At the end of this time a pedicle or a film of varying density generally forms throughout the fluid, and this is floated on to a slide in the same manner as is a piece of tissue. It is important not to mesh up the film; the thinner it spreads and the less tangled it is, the better will be the results. Aftr drying in the air the film is fixed by heat and stained with the usual carbol-fuchsin stain.

These eighteen positive globulin tests, added to the few already reported in the literature (Stillman,[10] Apelt,[8] Ross and Jones[5]), render it fairly certain that the reaction is present as a general rule in tuberculous meningitis. In our series it has been more constant than the lymphocytosis, and it certainly is much easier to perform than is a total cell-count and a differential count.

Many fluids have come to us from patients in whom a tentative diagnosis of tuberculous meningitis has been made, but in whom the later course of the disease proved the diagnosis to be incorrect.

TABLE 4.—CASES IN WHICH A TENTATIVE DIAGNOSIS OF TUBERCULOUS MENINGITIS HAD BEEN MADE

No.	Diagnosis	Noguchi	Cells	Remarks
70	Encephalitis	—	..	.....
71	Acute purulent adenitis	—	—	.....
72	Tetanus	—	—	.....
73	Gastro-enteritis	—	—	.....
74	Uremic coma	—	—	.....
75	Poliomyelitis	—	—	.....
76	?	—	—	Complete recovery
77	?	—	—	Complete recovery
78	?	—	—	Complete recovery

Nine cases of this nature are shown in Table 4; they include various diseases whose manifestations at the stage in which lumbar puncture was performed resembled those of tuberculous meningitis. In all it will be seen that both the cell-count and the globulin test were negative—a sufficiently strong contrast to the findings in tuberculous meningitis to warrant the statement that a negative butyric acid test is presumptive evidence against the presence of tuberculous meningitis. This cannot at present be stated as dogma, as many more examinations will have to be made before the exact truth can be learned. Again it must be emphasized that the reaction cannot, from its very nature, be specific for tuberculous meningitis, any more than it is for general paresis, and to be of any value at all it must be considered only after the most careful correlation with the history and physical findings.

TABLE 5.—MISCELLANEOUS

No.	Diagnosis	Noguchi	Cells	Wassermann
79	Hydrocephalus	—	—	—
80	Hydrocephalus	—	—	.....
82	Anterior poliomyelitis	—	..	.....
83	Encephalitis	+	—	.....
84	Uremia	—	—	.....
70	Encephalitis	—	—	.....
85	Uremia	—	—	—
86	Myelitis	+	+	—
87	Myelitis	—	—	—
89	Amaurotic family idiocy	+	+	+

As a further elucidation of this point Table 5, presenting the findings in a series of miscellaneous diseases, is of considerable value. In both cases of hydrocephalus the reaction was negative, although increased globulin has been reported present in this condition by Nonne.[11] In both cases of anterior poliomyelitis it was negative; in one case of encephalitis positive, in one negative; in one case of transverse myelitis positive, and in one negative. In three cases of uremic coma it was negative. In the case of amaurotic family idiocy the positive Noguchi and the positive Wassermann are hard to reconcile with the completely negative examination for syphilis at the autopsy. In considering the nature of the diseases in which the reaction seems to vary so much, it may be explained that all the conditions are such as may produce meningeal involvement and consequently a positive butyric acid reaction. On the whole, the main value of this small series lies in emphasizing that even in clinical conditions which may resemble tuberculous meningitis, a positive reaction does not by any means indicate the presence of a tuberculous inflammation, but a negative one presupposes the absence of such a condition.

CONCLUSIONS

This series warrants the following conclusions:

1. Tests for increased globulin in the spinal fluid are easier to perform than is the total cell-count, and have practically the same diagnostic importance.
2. The butyric acid test of Noguchi is convenient and accurate.
3. The use of this reaction gives information of considerable value in diagnosis.
4. The reaction is positive in general paralysis and cerebrospinal syphilis; negative in brain tumor, cerebral arteriosclerosis and psychoses. A positive reaction in a doubtful nervous case is presumptive evidence in favor of the diagnosis being a syphilitic or parasyphilitic disease of the nervous system.
5. In tabes dorsalis, our results are not in agreement with previous reports, the reaction being present in only 33⅓ per cent.
6. The reaction is positive in all cases of acute meningitis and absent in meningeal irritation without actual inflammation.
7. It is always present in tuberculous meningitis, and its presence is an aid in the diagnosis. The absence of the reaction in cases of suspected tuberculous meningitis is of great value in excluding meningitis.

10. Stillman: A Report on the Value of Noguchi's Reaction on Spinal Fluids, Proc. New York Path. Soc., 1909, new series, ix, 1.

11. Nonne: Clinical Diagnosis of the Syphilogenous Diseases of the Central Nervous System, THE JOURNAL A. M. A., 1909, liii, 289.

TREATMENT OF INOPERABLE CANCER OF THE CERVIX

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Believing as we do that permanent relief from cancer of the cervix comes through the timely application of the knife, we find little enthusiasm in the management of inoperable cases in which the patients at best can be given but temporary relief. When the disease has gone beyond the reach of the knife we say that it is incurable, but our responsibilities do not end here. Months, and perchance years, of comparative comfort may be added to the life of the unfortunate victim.

One cannot review the literature on the treatment of inoperable cancer of the cervix without being strengthened in one's conviction that much can be done in these pitiable cases. We cannot cure these patients, but we can relieve their suffering, inspire them with hope and give them added days of comfort and usefulness.

Blau reported 408 cases of inoperable cancer of the uterus in the Chrobak clinic. These patients were treated by scraping and the application of the Paquelin cautery; the procedure was repeated at intervals of three to four months. Subsequent reports were obtained from 342 of the 408 patients. One lived eleven years after the above treatment. One was alive and apparently in good health after nine years and another after six years. There was an average of 252 days of life after the initial curettement and cauterization.

In the cases of Conrad, there was an average of 525 days of life from repeated applications of chlorid of zinc and pyoktanin.

Baker reported fifteen patients living from two to twelve years; Byrne ninety patients living from two to seventeen years; Pawlik twenty-nine patients living from two to twenty-one years after repeated local applications. Tomer reports 213 patients treated with the Paquelin cautery free from recurrence after two years, and of this number 149 were apparently healed after five years.

Mose Madden amputated the cervix with the galvanocautery in twenty-two patients; ten were free of recurrence two and one-half years at the time of publication.

The above statistics could be added to indefinitely, but enough have been quoted to convince the most skeptical that cauterization is worth while. While it is true that these statistics antedate the extended operations, and that in many the diagnosis was not verified by microscopic examination, yet the proof of the value of local applications and of cauterization in particular is not wanting.

No signal advance has been made of late years in the treatment of inoperable cases, and the explanation lies, in part, in the difficulties experienced in their management. Few hospitals will harbor these sufferers for the time necessary to pursue extended observations. The patients are usually admitted for a single application of one remedy or another and in a few days are dismissed. The rich will not remain in the hospital, the poor cannot afford to remain, and the hospital management has no desire to retain either. Tomer and Chrobak pass caustic criticism on the attitude of the hospital management toward these patients and recommend isolated wards for their care. In this connection I am pleased to bear witness to the splendid facilities provided in the Skin and Cancer Hospital of St. Louis and to the recent valued contributions to the subject in hand by a member of the surgical staff.

The great number of inoperable patients who present themselves reflect discredit on the diagnostic acumen of the profession, and call for an organized effort looking toward the enlightenment of the laity to the end that women will seek medical advice when the danger-signals become manifest.

The large percentage of recurrences are not chargeable to faulty technic, for it would seem that in the radical abdominal operation for cancer of the cervix we have all but reached our limitations. The explanation lies rather in the failure to recognize the cases while there is yet time to eradicate the disease completely with the knife. Far too frequently are these patients operated on when eradication of the entire cancerous growth is manifestly impossible. "Operated and operable cases may be, and in reality often are, quite different things" says Koblanck. In this connection, I would express the conviction that were we to follow the suggestion of Rosthorn and Franz in the making of an exploratory abdominal incision in recurrent cases, we would find more encouragement in pursuing such cases with repeated attempts to eradicate the disease. When doubt exists as to the extent of recurrence, an exploratory abdominal incision should be made, and in so doing a certain, though not large, percentage of these patients will be found amenable to surgical intervention who might otherwise be treated along palliative lines.

It requires but a hasty survey of the literature to convince one of the futility of all efforts to stay the progress of the disease when once it has passed the confines of the uterus. Were I to recite the long list of remedies proposed in the last two decades, there would be nothing gained and the space allotted me would be consumed. I shall pass them by without consideration, for they have been weighed in the balance and found wanting. The Roentgen ray had proved of positive value in many of the superficial cancerous growths of the body, and the profession was slow to reject its claims as a curative measure for cancer of the cervix, but it has gone the way of its predecessors and to-day we find ourselves almost as helpless as we were generations ago.

The curette and cautery are still in active service, and I for one am not disposed to discard them, for they have proved of positive value in my hands in providing temporary relief from hemorrhage and foul discharges. Though the disease steadily advances to a fatal issue, we are bound to give credit to these measures for added days of comparative comfort. The results of Blau and others clearly demonstrate the value of repeated applications of the curette and cautery at intervals of from three to four months. Unfortunately, we are seldom privileged to follow up our patients so persistently. A single application will afford relief from bloody and fetid discharges for but a brief time, but the recurrence of these discharges will be longer delayed with each application.

Dr. James Spencer Brown of Mont Clair, N. J., is an enthusiastic advocate of the vigorous application of the cautery. He protects the vaginal walls with thin asbestos, holding the sheets in place by retractors. With the soldering iron he deeply cauterizes not only the cervix but the cavity of the uterus as well.

For the past six years I have followed the practice of Dr. Clarence Webster in packing the excochleated and cauterized area with gauze wrung out in a 1 to 4,000 aqueous solution of 40 per cent. liquor formaldehydi. Following such a procedure bloody and odorous discharges may disappear for from two to four months.

The latest remedy proposed for the relief from hemorrhages and fetid discharges is acetone. We are indebted to Dr. George Gellhorn[1] of St. Louis for its introduction and for extended observations in its application. Results obtained by him speak for the efficacy of the remedy, and it is to be hoped that the profession will join with Dr. Gellhorn[1] in giving it an extended trial. I here quote his description of the technic of its application:

> **The treatment should, if feasible, be preceded by a thorough excochleation of the ulcerating area. The curetted cavity or crater is then carefully dried with cotton sponges and from ½ to 1 ounce of acetone is poured into the wound through a Ferguson or other tubular speculum. For this purpose, the pelvis of the patient must be raised as in Trendelenburg's position. The narcosis may now be interrupted and the patient be left in this position for from fifteen to thirty minutes. Next, the acetone is permitted to run out through the speculum by lowering the pelvis of the patient and the cavity is packed with a**

1. THE JOURNAL A. M. A., April 27, 1907, p. 1400.

narrow gauze strip soaked in acetone. The healthy mucosa of the vulva and the vagina are cleansed with sterile water and dried.

After this preliminary curetting and cauterization, the regular treatment, which requires no further hospital care, is administered two or three times a week, beginning the fourth or fifth day after the operation. This is done without narcosis and may be given with the patient in bed or on the ordinary examining chair or table in the office. The pelvis of the patient is raised and the tubular speculum is inserted into the cancerous cavity. With the progressive diminution of the crater, smaller specula are gradually employed. The speculum is filled with acetone and held in place by the patient's hand for half an hour, and is then emptied in the manner described above. Care should be taken to prevent the acetone from running over the vulva or perineum.

In a subsequent article[2] Gellhorn states that he prevents the acetone from running over the vulva and perineum by applying a thick layer of ordinary petrolatum to the vulva and lower third of the vagina; then, after the acetone has run out of the speculum, he swabs the cavity dry and introduces a large cotton tampon coated with petrolatum into the vagina before the speculum is withdrawn. This tampon may be removed by the patient after a few hours.

Gellhorn says that slight oozing of blood is checked almost instantly; that offensive discharges become at first watery, then gradually disappear; that the hemorrhages fail to recur if the treatment is faithfully pursued and that in the course of two or three weeks the walls of the crater become smooth and firm, making a second curettement unnecessary. A diminution in the size of the crater was noted in some cases. With the disappearance of the weakening hemorrhages and discharges, the general strength and nutrition improved. There was no control over the pain due to the cancerous invasion of the nerve trunks.

From the experience of Gellhorn and the few others who have contributed to his observations, I am persuaded that we have in acetone a valuable remedy in the treatment of inoperable cancer of the cervix. It has advantages over the curette, cautery and formaldehyd packs when the patient can be kept under the control of the physician. When the case will not permit of constant supervision, I would give preference to the cautery and formaldehyd solution on the ground that a single application of the latter will have a more lasting effect.

At the recent meeting of the American Gynecological Society in Washington, I took occasion to interview many of the fellows of the society on the subject. There was no manifest enthusiasm in their management of these cases. The great majority were in favor of the curette and cautery and advised the vigorous application of the Paquelin cautery after scraping away all necrotic tissue. Kelly holds the cautery at white heat in the excochleated area for several minutes. In this manner the tissues are deeply affected. Far from criticizing the use of the cautery in these cases, the majority spoke for its more vigorous application.

A variety of remedies were recommended after the application of the curette and cautery, e.g., zinc chlorid (Peterson), equal parts of formaldehyd solution and epinephrin together with the chlorid of zinc (Clark), tincture of iodin locally and Lugol's solution internally (Montgomery).

Only three of the men interviewed had tried the acetone treatment and one of these had abandoned it because of technical difficulties involved in its application (Chipman).

It was my impression that the majority of the men interviewed were of the opinion that the curette and cautery would accomplish all that could be done for these patients. Few had given the acetone treatment the consideration it deserves.

Recently Richter[3] gave an account of the work done in Leopold's clinic with the method of fulguration as proposed by Keating-Hart in 1908. The report is not favorable to the method. I note with interest, however, that the acetone treatment of Gellhorn is endorsed most enthusiastically. One patient has received eighty applications of acetone in the past twenty-one months. The vagina was contracted by bands of scar tissue and would admit the index-finger but 2.5 cm. There was a fistula at the vault of the vagina which discharged a slight bloody purulent secretion. The pelvic connective tissue was widely infiltrated. The patient complained of pelvic pain but her general appearance was good. Richter speaks of the acetone treatment as the most satisfactory method ever employed in Leopold's clinic.

As yet, no remedy has approached the desired object—that of destroying the invading cancer cells. We look to the chemist and biologist for the solution of the problem, believing that a vaccine will be forthcoming that will do more than palliate this dread disease—a vaccine that will prevent the development of cancer, that will forestall recurrence and that will stay the progress in inoperable cases.

NOTE.—Since writing the above I have had the privilege of visiting the new Skin and Cancer Hospital of St. Louis. In this visit I examined several of Dr. Gellhorn's cases of inoperable cancer of the cervix, and saw him treat two of his patients. His results are unquestionably superior to any that have been obtained by methods previously in vogue. In none of his cases did I observe either odor or hemorrhage.

One case was particularly noteworthy. A growth, which filled the vault of the vagina, was curetted about one year ago. Since then the patient has had twenty applications of acetone. When I saw her there was no odorous discharge, no hemorrhage; the vault of the vagina appeared as a puckered scar with a small fistulous opening leading to the uterus. The patient had gained 20 pounds in weight and suffered little or no pain. Unquestionably, her life has been prolonged and made comfortable to a degree that speaks for the inestimable advantage of the acetone treatment.

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2. Am. Jour. Obst., May, 1909.

TREATMENT OF EXOPHTHALMIC GOITER WITH THYROIDECTIN

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Working on the hypothesis that the symptoms of exophthalmic goiter are due to excessive secretion of the thyroid gland, attempts have been made by some to limit the amount of this secretion by extirpating a portion of the gland, by ligating its arteries, and by interstitial injections intended to cause partial atrophy. Approaching the problem from another standpoint, others have endeavored to neutralize the products of glandular hyperactivity by administering milk, blood, or serum of animals whose thyroid glands have been removed, and in which the hypothetical antibodies which normally neutralize the thyroid secretion may be supposed to have accumulated. Still others have employed serums made by injecting into animals normal human thyroid or that of patients suffering from exophthalmic goiter.

3. Münch. med. Wchnschr., April 26, 1910.

Although the wave of enthusiasm which accompanies the introduction of any new remedy seems to have passed, judgment of the value of most of these serums appears to be based on individual reports of one or more cases in which there was improvement during their administration, alone or combined with other treatment, and often with the most important addition of rest in bed. Unfavorable results are always less likely to be recorded than successful cases.

Many writers group the results obtained with various preparations and, giving few data concerning individual cases, draw their conclusions as to "serum-therapy" collectively. Thus, F. S. Bulkeley[1] in a review of the literature of serum treatment of exophthalmic goiter, omitting that relating to the serums of Rogers and Beebe, has collected reports of eighty-six cases. Excluding from these the cases of three patients treated with the blood of a myxedema patient, he records eighty-three cases, with improvement in all but six, and sixteen possible cures judging from data given. This writer groups collectively cases in which Moebius' antithyroidin, serum of rabbits fed with thyroid extract, thyroidectin, serum of a thyroidectomized dog, milk of thyroidectomized goats and a proprietary substance said to be prepared from the milk of thyroidectomized goats were administered; and from these he generalizes as to the effect of "serum-therapy."

Confining our attention to thyroidectin, which is prepared from the blood of thyroidectomized animals, and of which few reports have been published, we find in this list of cases collected by Bulkeley thirty, all of which were pronounced improved, none cured. Since that time A. G. Gullan[2] has recorded five cases, all greatly improved; and H. H. Miller[3] one case in which for eight weeks thyroidectin and iodalbin were administered synchronously, with disappearance of symptoms. The same medication was continued irregularly for three months, and about one year later the symptoms had not returned. These reports include thirty-six cases with improvement in 100 per cent. In contrast, we note the general verdict of A. Kocher,[4] who states that thyroidectin is of inconstant and not of lasting benefit; of E. M. Fisher,[5] who says, "Thyroidectin has proved useless in my hands"; of D'Orsay Hecht,[6] who writes, "Thyroidectin cannot be said to have ever stood approved." Aside from these general condemnations, F. Billings[7] reports the use of from 15 to 40 grains of thyroidectin a day in divided doses in twelve cases with varying results. In none did he secure the favorable results recorded by others. In two cases the symptoms were aggravated by the remedy. This report of Billings is excluded by Bulkeley in his collation of cases up to 1907, which includes thirty cases all improved by the use of thyroidectin, on the ground of scantiness of data and lack of distinct statement of failure or improvement. M. T. Sudler,[8] giving very few data, reports a single case of unilateral goiter with nervousness and rapid pulse treated "medically with the addition of thyroidectin," which seemed to improve very slightly and has since remained about the same. S. Gillies[9] has seen improvement in patients taking thyroidectin, but is not sure that suggestion has not much to do with the results.

1. Bulkeley, F. S.: Boston Med. and Surg. Jour., 1907, clvii, 626.
2. Gullan, A. G.: Lancet, London, 1908, ii, 708.
3. Miller, H. H.: Kansas City Med. Ind.-Lancet, 1908, xxxi, 444.
4. Kocher, A.: München. med. Wchnschr., 1910, lvii, 677.
5. Fisher, E. M.: Jour. Med. Soc. New Jersey, 1909-10, vi, 173.
6. Hecht, D'Orsay: Illinois Med. Jour., 1909, xvi, 248.
7. Billings, F.: THE JOURNAL A. M. A., 1907, xlviii, 349.
8. Sudler, M. T.: Jour. Kansas Med. Soc., 1909, ix, 75.
9. Gillies, S.: Australasian Med. Gaz., 1910, xix, 471.

In the following five cases thyroidectin has been used:

CASE 1.—*History.*—A. T. B., a woman aged 26, single, bookbinder, native of United States, entered New York Hospital (Medical No. 12,120) Feb. 25, 1905. The family history was negative. The patient had had measles, pertussis, scarlatina in childhood; frequent bronchitis; menstruation regular. About 1896 the patient noticed a swelling in central part of neck anteriorly. This slowly increased until 1904; since then there has been no further enlargement. In 1897 the patient noticed that the eyes were becoming prominent, and they continued to do so until 1904. The patient became very nervous; had hysterical manifestations at intervals; has had palpitation of the heart, which was made worse by exertion, as long as she can remember.

Physical Examination.—The patient was fairly well nourished, muscular, with neurotic facies and marked exophthalmos. Von Graefe's sign was present; the patient was unable to approximate the lids completely; there was marked pigmentation of upper lids. There was bilateral enlargement of thyroid; fine systolic thrill over it; loud systolic bruit, loudest over right lobe of thyroid. Cardiac apex-beat in fourth intercostal space, 7.5 cm. to left of median line; sounds clear; systolic murmur at aortic and pulmonic areas, and very faint at apex. The pulse was regular, force fair, tension low. There was slight tremor of hands, especially the right; slight edema of ankles. The lymph-nodes in the groin were enlarged. Temperature, 99 F.; respiration, 20; pulse, 108; red blood-cells, 4,928,000; hemoglobin, 94 per cent. The specific gravity of the urine was 1.014-1.019; acid; no albumin; no sugar; occasional leukocyte. Temperature, February 25 to March 22, 97.6-99.2 F. Pulse, February 25 to March 3, 88-108; March 3 to 17, 88-120; March 17 to 22, 76-118. February 28, weight, 120 pounds.

Treatment and Result.—February 25 to March 1 the patient was given neutral quinin bromid gr. v, three times a day, with no apparent results. March 3 to 17, thyroidectin gr. v, t. i. d. The patient was not confined to bed during her stay in the hospital. March 3 the circumference of neck was 33 cm.; pulse, 80; marked exophthalmos; slight tremor; no marked nervousness. March 4 her weight was 121.5 pounds. March 15 the circumference of the neck was the same; patient felt less nervous; had less palpitation when recumbent; had had headache after 9:30 a. m. every day since beginning thyroidectin; the objective signs were unchanged. March 17 thyroidectin was discontinued; the patient had only one headache subsequently. The only improvement was a gain in weight to 127 pounds. March 28 the patient was transferred to the First Surgical Division and the right lobe and isthmus were removed.

CASE 2.—*History.*—M. B., a married woman aged 38, housewife, native of United States, entered New York Hospital, O. P. D., June 20, 1905. One child died of tuberculosis. The patient was accustomed to take one to two cups of tea, one of coffee, daily. For three years the patient had had a cough, with mucopurulent sputum in the morning, and during that time had lost 60 pounds. For two years the patient had had dyspnea on exertion. Patient was seen in 1904 on account of swelling of front of neck which she had just discovered, though her family had noticed it two or three years previously. At that time she had enlargement of the thyroid, exophthalmos, tremor, and, at left apex, prolonged expiration and subcrepitant râles; temperature, 99.2-99.6 F.; pulse 88-156. For two or three months the patient had had general pruritus, excepting of face; for five or six months pain in the lumbar region; had diarrhea with tenesmus for the previous three weeks; complained also of loss of weight and strength, palpitation and nervousness.

Physical Examination.—The patient was fairly well nourished; had decided exophthalmos. The conjunctivæ were congested and the tongue was slightly coated. There was marked tremor of tongue and fingers. Cardiac apex-beat in fifth intercostal space, 11.5 cm. to left of median line; dulness to third rib, and nearly to median line; faint systolic murmur at second left space; pulse regular, small, moderate tension. There was moderate general enlargement of thyroid, especially right lobe; the circumference of neck over thyroid was 34 cm.;

there were systolic and diastolic murmurs over the thyroid. The temperature was 98.4 F.; pulse, 196. The specific gravity of the urine was 1.015; acid; no albumin; no sugar; one granular cast. The patient's weight was 142¼ pounds.

Treatment and Result.—June 20 the patient was given castor oil and salol, and commenced thyroidectin, gr. v, after food. Six days later, the bowels were normal, palpitation much less; temperature 99.2 F.; pulse 132. Palpitation was less until July 2, when it suddenly recurred. Nervousness was less until same date; exophthalmos diminished; tremor about the same; weight had increased about 2.5 pounds; pulse 108. An ice-bag over the precordia relieved the palpitation. Nervousness diminished until the supply of thyroidectin gave out on July 21; it then increased, as did tremor and exophthalmos, perhaps on account of excitement due to the death of the patient's mother. The pruritus was worse for the previous month; lumbar pains for two or three weeks. July 26, thyroidectin was resumed. August 9, the exophthalmos was less but the nervousness and tremor increased; palpitation occurred frequently; there were thirst, profuse sweating on exertion and headache. The thyroid had enlarged; circumference of neck, 36 cm.; distinct systolic thrill and pulsation and loud double murmur over thyroid. August 21, palpitation was constant and severe; there had been pain in the epigastrium for the previous week, with diarrhea. The pruritus was less; headaches continued; thyroid the same; tremor increased; temperature 98.8 F.; pulse 176. The thyroidectin, which had caused no permanent improvement, was discontinued.

CASE 3.—*History.*—L. W., female, aged 47, widow, laundress, native of United States, entered New York Hospital (Medical No. 12,406), April 27, 1905. One sister had enlarged neck but not prominent eyes. The patient had had measles twice; menstruated regularly. She had seven children, and had had no abortions. She was accustomed to drink about six cups of tea and three of coffee daily. About May, 1902, the patient's physician noticed that her neck was swollen; she complained of occasional cardiac palpitation. In May, 1903, she felt very nervous and had some puffiness of the ankles; was in New York Hospital, May 20 to June 27, 1903, with exophthalmic goiter and cardiac dilatation. While in bed both conditions improved markedly, and showed tendency to aggravation when she was allowed up. For one year after this the patient felt well, except for some palpitation and occasional diarrhea; had been growing weaker constantly for previous year; had been unable to work for previous three weeks. She had increasing dyspnea on exertion; she had had a cough during the winter; at time of examination it was less and with no expectoration. She had some frontal and vertical headache; no visual symptoms or edema; no increase of exophthalmos or size of neck; chief complaint, weakness.

Physical Examination.—The patient was fairly nourished, with flabby muscles. There was slight prominence of the eyes; Stellwag's sign was slight; von Graefe's sign absent. The tongue was very slightly tremulous. The thyroid was somewhat enlarged asymmetrically; there was no palpable pulsation, but fine systolic thrill and loud bruit over gland, much more marked on left side. The cardiac apex-beat was in fifth intercostal space, 10 cm. to left of median line; forcible; there was a systolic murmur at aortic area and at apex transmitted toward axilla; pulse full; considerable tension. The lungs were normal, except cog-wheel inspiration at apices posteriorly and slightly exaggerated breathing at left apex. There was marked tremor of the hands. The temperature was 99.6 F.; respiration, 28; pulse, 120; subsequently 80-100. The specific gravity of the urine was 1.016-1.023; acid; faint trace of albumin; no sugar; no casts. April 28, the patient's weight was 118 pounds; she was not confined to bed.

Treatment and Result.—Thyroidectin was given, gr. v, three times a day; emulsion of cod liver oil half an ounce after food. May 19, thyroidectin was discontinued. The pulse was 96-112; rate quite as high as before treatment. The patient's weight had increased to 123 pounds. Improvement was less than with rest in bed during previous stay in hospital.

CASE 4.—*History.*—E. P., a married woman aged 45, housewife, native of United States; entered New York Hospital, O. P. D., March 30, 1907. The patient's father had rheumatism. The patient had had no diseases of childhood; she had had frequent "bilious attacks," and for five years, papular eczema every winter; and cough in the morning for years. She was accustomed to drink one cup of tea and one cup of coffee daily. About Dec. 22, 1906, after an unusually hard day's work, the patient became tired and thirsty and could not sleep; she then noticed inability to speak quickly and was easily fatigued. Early in January, 1907, the patient began to have dyspnea on exertion, palpitation after meals, bad taste, swelling of ankles. Toward the end of that month the patient noticed slight swelling of front of neck, varying slightly in size. Her weight was 135 pounds six months prior to admission; she became thin in January; was always puffy under the eyes, worse for the previous month. She vomited three times three days prior to admission.

Physical Examination.—The patient was rather poorly nourished. The eyes were slightly prominent, with puffiness of lower lids. There was slight general enlargement of thyroid, especially right lobe and isthmus; circumference of neck, 31.5 cm. The cardiac apex-beat was in sixth intercostal space, 12.5 cm. to left of median line; forcible; there was dulness to the second rib and to the left border of the sternum; systolic murmurs at second right and left intercostal spaces; the pulse was of fair size, moderate tension. Above the right clavicle and in first intercostal space were dulness, bronchial breathing, whispered pectoriloquy; above spine of right scapula, same. There was liver dulness from the fourth intercostal space to 4 cm. below costal margin in right parasternal line. There was very slight tremor of the fingers. The temperature was 99.2 F.; pulse 104. The patient's weight was 109.5 pounds.

Treatment and Result.—Rhubarb and soda with nux vomica were given before meals; thyroidectin gr. v, after food. April 6, there were no gastric symptoms; no dyspnea on exertion. The specific gravity of the urine was 1.026; acid; no albumin; microscopically negative. April 11, there was slight increase of exophthalmos and tremor, both of which had diminished one week later, while the weight had reached 115. By May 7, the patient had been taking thyroidectin irregularly for the previous week. She then had a choking feeling when hurrying; venous hum over jugular veins; aortic second sound accentuated; systolic murmur over precordia, maximum intensity in second right intercostal space; pulse occasionally irregular in frequency; hemoglobin, 64 per cent. (von Fleischl). She was now given iron, arsenic and strychnin in addition to thyroidectin. May 15, there had been palpitation for two days, which at times seemed slightly diminished by thyroidectin. The weight was 110.5 pounds. Along the left border of the sternum there was a scraping systolic murmur, maximum intensity in the third and fourth intercostal spaces, close to the ear, sometimes increased by bending forward; at other times when straight, after bending forward; there was a systolic murmur at the second right intercostal space. Thyroidectin was given, gr. x, after food for three days, then gr. v, after food. May 27, palpitation was worse while taking thyroidectin gr. x, after food; it was relieved by sodium bromid gr. x, taken as needed; recurred after taking thyroidectin gr. v, after food, again. June 4, there was increased tremor; the heart was overacting; the pericardial friction sound was still audible. The patient was given tincture of belladonna, Blaud's pills. June 17, the patient's weight was 108.5 pounds; hemoglobin 80 per cent.; circumference of neck same as on admission; little palpitation or dyspnea. July 17, the patient's weight was 105; temperature 98.7 F.; pulse, 84; there was increased exophthalmos; perhaps increased tremor; little palpitation. The patient was given thyroid extract gr. v, twice a day after July 24. Severe palpitation began on July 28, with edema of face and feet; the patient felt weak on rising. July 31, the patient's weight was 112.5; temperature 98.8 F.; pulse, 108, and very irregular in frequency; there was increased tremor. The patient was given thyroidectin gr. v, after food. After four doses she was much worse; palpitation, weakness and nervousness were present, and edema of legs more marked. The patient's weight was 116.5; temperature, 99.4 F.; pulse, 108, of slightly increased tension. There was increased exophthalmos. Thyroidectin was discontinued. The patient was

treated subsequently with sodium bromid, belladonna, strophanthus, tonics and ice-cap over the heart. The patient's weight rose to 123 pounds. Symptoms of exophthalmic goiter varied as before. The heart showed signs of dilatation and hypertrophy, with marked irregularity in force and frequency of pulse; the urine was of low specific gravity; edema of whole of lower extremities was present, also gastric disturbance. July 1, 1909, the thyroid was smaller; there were no symptoms of exophthalmic goiter except slight exophthalmos; the symptoms were chiefly edema and diminished urine, of specific gravity not above 1.016; no albumin.

CASE 5.—*History.*—The patient, M. W., a widow aged 36, domestic, native of Ireland, was seen May 15, 1908. Her father died of tuberculosis. The patient had had measles, variola, scarlatina and pertussis. She married in 1900; one year later had still-birth at term; then three abortions at two to three months; finally labor at eight months, three and a half years before the time of examination; the child was living. Menstruation had been irregular before the patient's marriage; after labor no menstruation for two years. Hemorrhage preceded all abortions and labor, and dyspnea and edema of legs were present in all pregnancies. The patient had had cough since marriage; sputum white; at times blood-streaked; for the previous four years cough only in winter. She was accustomed to take five cups of tea daily. At 12 years of age the patient had several frights; began to have choking feeling, then marked tremor; palpitation when excited; did not notice goiter until she was 15, though friends had observed thickness of neck for one or two years. At that time the patient had dyspnea, increasing weakness, and prominence of eyes. The symptoms were worst at the age of 17; six months later she was obliged to stop work, and was in hospital twice for three months. The patient was treated ten or twelve years with belladonna, digitalis, ergotin, quinin, iron, arsenic and bromids; improved at 24; was able to work later, but nervousness and tremor continued; she had been losing weight for years. From 12 to 26 years the patient had frequent stools soon after meals; no other symptoms. Beginning work in new place May 12, the patient became very nervous and had had repeated attacks of tachycardia, so severe as temporarily to prevent working.

Physical Examination.—The patient was poorly nourished and very nervous, with flushed face and slight bilateral exophthalmos. She had a marked tremor, especially of hands, so severe that she could not handle fluids without spilling them. There was general, soft, uniform enlargement of the thyroid, with overlying veins distended; the circumference of neck was 38 cm. The cardiac apex-beat was heaving, in the fifth intercostal space 9 cm. to the left of the median line; there was dulness to the third rib and to the median line; systolic murmur at apex transmitted slightly to left; from the second rib upward to and over the thyroid, there was blowing systolic murmur; loud venous hum over vessels of neck, especially during systole.

Treatment and Result.—Thyroidectin, gr. v, was given after food. May 17, the patient was less nervous; pulse, 96 to 100, regular; hemoglobin, 68 per cent. The patient was given ovoferrin after food. May 22, she had had epistaxis for one week at intervals; there was less tremor and nervousness; pulse, 96; circumference of neck, 37 cm. Thyroidectin was given, gr. x, after food, for four days, and patient thought improvement continued, but she was more nervous; pulse was 96 to 108; weight 91¾ pounds. Thyroidectin was discontinued; sodium bromid was given, gr. x, before food, and soon afterward, iron. July 12, the patient's weight was 99¾; hemoglobin 103 per cent.; there were no severe nervous attacks with tachycardia; otherwise the patient's condition was the same. After resting for two months patient returned to work, weighing 107 pounds, and attacks recurred. The left lobe of the thyroid, partially intrathoracic, was removed; four months later, the patient's weight was 115. The exophthalmos, nervousness and tremor gradually subsided. Jan. 17, 1910, there was still some nervousness, tremor and slight tachycardia when the patient was excited, but much less than before operation.

On account of the uniformly unfavorable results, thyroidectin was used in no further cases.

Before the introduction of thyroidectin, I had employed desiccated milk of the thyroidectomized cow and goat, each in one case. The histories are as follows:

CASE 6.—*History.*—A. A., a married woman aged 38, housewife, native of United States; entered Vanderbilt clinic Feb. 4, 1905. The family and previous history were negative in their bearing on present illness. Menstruation was normal. The patient was accustomed to take two cups of coffee and four of tea daily. In February, 1903, the patient noticed a swelling in the right side of the neck anteriorly; two or three months later she began to have constant palpitation, loss of weight, nervousness and enlargement of the remainder of thyroid; swelling increased gradually but steadily. The patient did not menstruate in July, August and September, 1903, but was regular following that time. The patient improved at intervals under treatment, but was not kept in bed at any time. After any excitement the patient had diurnal headaches, chiefly frontal and vertical. The patient had not noticed prominence of the eye-balls until told of it by her physician in May, 1903. Protrusion diminished slightly after that time. Dyspnea had occurred on exertion for the past year. There were slight dry cough and hoarseness since December, 1904. Chief complaints: nervousness, palpitation, headaches.

Physical Examination.—The patient's face was flushed. There was slight exophthalmos; von Graefe's sign was present; quivering eyelids. The whole thyroid, especially the right lobe, was enlarged; the circumference of the neck was 38 cm. There was a double murmur over the thyroid, especially at the sides; a constant bruit and thrill over jugular veins; loud systolic murmur over carotid and subclavian arteries. The cardiac apex-beat was in the fifth intercostal space 10 cm. to left of median line, heaving; there was an area of dulness to the third rib and to the left border of the sternum; and a systolic murmur over whole precordia; first sound reduplicated at the apex. There was marked tremor of the hands; varicose veins and slight edema of legs. The temperature was 98.4 F.; respiration, 28; pulse, 132. The patient's weight was 142.5 pounds. The specific gravity of the urine was 1.011; acid; no albumin.

Treatment and Result.—February 4 the patient was given tincture of digitalis and a mixture containing bromids with nux vomica. During the ensuing week the patient felt much better in every way; pulse fell to 108; weight increased two pounds. Four days later the patient reported severe palpitation and no decrease of nervousness; temperature 98.8 F.; pulse 108. She was given desiccated milk of thyroidectomized cow, gr. v, three times a day. March 2, temperature 99.2 F.; pulse 132. March 6, the patient reported constant palpitation and weakness; she said that the goiter seemed swollen every night; temperature 98 F.; pulse, 184. There was no change in nervousness, tremor or exophthalmos; circumference of the neck was 39 cm. A letter from her husband, dated March 23, forcibly reported apparent results of treatment. "My wife since she commence to take those capsules her heart was about to jump out of her body and I put a stop to her taking them. She will not call again upon you."

CASE 7.—*History.*—H. E., a married woman aged 42, housewife, Hungarian, entered Vanderbilt Clinic, March 11, 1905. The family and previous history were negative. The patient had one healthy child born twelve years previous to admission. A few weeks later the patient noticed a slight swelling in front of neck, which increased rapidly for one year; not subsequently. The patient was married a second time three years previous to admission; and after that had much domestic trouble and became very nervous. One and a half years prior to admission the patient began to have swelling of the right lobe of the thyroid, which increased gradually and was occasionally painful, especially at night. For the previous six or eight weeks, there had been rapid and exaggerated heart action; no exophthalmos or tremor. The patient would eat only at supper time on account of excitement, and drank six to eight cups of coffee daily.

Physical Examination.—There was no exophthalmos; cyst about 1¼ inches in diameter in isthmus of thyroid; right lobe similarly enlarged; no bruit over gland; circumference of the neck over the large cyst 38.5 cm. The cardiac apex-beat was in the fifth intercostal space, 11 cm. to left of median line; there was dulness to the third rib and to 0.5 cm. to left of left border of sternum; a faint systolic murmur at second right intercostal space. The pulse was regular. There was slight tremor of the hands. The temperature was 100 F.; respiration, 28; pulse, 96. Urine: specific gravity 1.018; acid; no albumin; microscopically negative.

Treatment and Results.—The patient was given extract of belladonna gr. ¼, every four hours, and a mixture containing bromids and nux vomica. The temperature was 98.8-99.6 F.; pulse, 92-120. April 1, there was no pain in the neck; otherwise the symptoms were the same; the circumference of the neck was 36.5 cm. April 4 there was increased palpitation and nervousness; the patient was given desiccated milk of thyroidectomized goats, gr. v, three times a day until May 18. Temperature was still 99-99.6 F.; pulse 96-112. April 20, there were less nervousness and palpitation. May 2, the patient felt much better; the cyst was less tense, but the circumference of the neck was unchanged. One week later the patient was still having palpitation but no nervousness, and had complained of pain in left side of the thyroid for two weeks. May 18, pulse 84. Desiccated milk was discontinued. May 23, there was no nervousness; less palpitation.

Summarizing the apparent results of treatment with thyroidectin without absolute rest in bed—apparent, because of the well-known variability of symptoms in exophthalmic goiter and the powerful effect on the nervous symptoms of suggestion of the potency of a new remedy—we find:

In Case 1, with treatment for two weeks with thyroidectin gr. v, three times a day, the nervousness diminished and tachycardia was less when the patient was recumbent; but there was no actual improvement save gain in weight. Headaches were present daily while the patient was taking thyroidectin; they ceased immediately when it was discontinued, except one day.

In Case 2, with the same dosage for nine weeks, with the exception of five days, the patient showed diminution of palpitation and nervousness at first. Subsequently all symptoms increased.

In Case 3, with the same dose for three weeks, there was slight general improvement, less than with rest in bed during the previous stay in the hospital; and no greater than change of habits and partial rest would account for.

In Case 4, the patient, treated fifty-seven days with gr. v, after food, and three days with gr. x, after food, showed very slight initial improvement, apparently a coincidence, or due to suggestion. The symptoms later became more marked under treatment; at times apparently exaggerated by thyroidectin, especially by dose of gr. x, after food.

In Case 5, treated seven days with gr. v, after food, and four days with gr. x, after food, the patient showed less nervousness and tremor during treatment. The symptoms were always greatly aggravated by any excitement. The patient was under great nervous strain when first seen. There was no real permanent improvement.

The patients had had symptoms for nine years, three years, three years, three months, and twenty-four years respectively, before thyroidectin was given. All the cases were of moderate or marked severity, except Case 3. Two showed severe cardiac lesions. Thyroidectin was given for from eleven to sixty-one days; dosage, gr. v to x, after food. Temporary improvement of symptoms was chiefly in tachycardia and tremor.

While none of these patients showed any real improvement excepting what would be amply accounted for by rest and regularity of habits, Patients 3, 4, and 5, if seen only during the early part of the treatment, might have been reported as improved. Their subsequent course suggests great caution in interpreting the reported 100 per cent. of improved cases.

The two patients treated with desiccated milk of thyroidectomized animals showed, in one instance, very marked aggravation of symptoms, especially tachycardia and weakness; in the other, nervousness disappeared, palpitation diminished, and the pulse-rate, previously 92-120, fell to 84-90. This case might have been considered improved, but regulation of excessive coffee drinking might largely account for this change.

My impression is that whatever improvement was noticed in any of these cases was due to rest, regulation of habits, and suggestion, or was a coincidence. The aggravation of symptoms may also have been a coincidence, but when it occurred it followed very closely the periods of administration of the drug.

SUMMARY

The few recorded results with thyroidectin in exophthalmic goiter are, on the one hand, improvement in 100 per cent. of thirty-six cases reported by three writers; on the other, one unfavorable report on twelve cases, one of negative results in a single case, and general condemnation, without details, by three observers. To these I add five cases, none of which gave results which were greater than the ordinary variation in symptoms in exophthalmic goiter under the influence of rest, suggestion, and regulation of habits, while in one case the remedy appeared to aggravate the symptoms. My two patients treated with desiccated milk of thyroidectomized animals showed extreme aggravation of symptoms in one case, apparently a direct result of the treatment, and in the other improvement, probably due to restriction of coffee. The results of treatment with thyroidectin seem far inferior to those secured by rest, symptomatic medical treatment, or partial thyroidectomy.

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SUCCESSFUL REMOVAL OF BRAIN TUMORS

A CEREBELLAR TUMOR AND AN ENDOTHELIOMA OF THE PREFRONTAL DURA MATER

LEO NEWMARK, M.D.

WITH

H. B. A. KUGELER, M.D., AND HARRY M. SHERMAN, M.D.

SAN FRANCISCO

The fortunate outcome in these cases of cerebellar tumor and endothelioma of the dura is offset by an unhappy termination of our endeavors in a considerable number of instances of intracranial growths. There have been records enough of others' failures, however, to console us, and enough of successes to encourage us to persevere. The following account may render at least the latter service to those who need it.

CASE 1 (By L. Newmark and H. B. A. Kugeler).—*Abstract.* Headache and vomiting began in November, 1908. In March, 1909, impairment of vision. In September, 1909, exploratory punctures and aspiration of (normal) substance from both cerebellar hemispheres. Escape of cerebrospinal fluid from puncture on the *right*. Subsidence of papillitis, and apparent good health for ten months. Then return of suffering; anesthesia in *right* trigeminal area. In November, 1910, removal of tumor from *left* cerebellar hemisphere.

Symptoms.—The patient was a girl 20 years old at the time of this report. In June, 1906, she is said to have vomited on three occasions, each time after supper, but without apparent cause. For six months thereafter the menses were suppressed. Otherwise she was quite well until November, 1908, when she began to have headaches and occasional vomiting on rising in the morning. At first the vomiting would occur about once a month, without relation to menstruation; after three or four months the intervals became shorter, until in the spring of 1909 they were reduced to two or three days. In March, 1909, her sight began to fail; she would be unable to read what she had produced on the typewriter. She held her head stiffly and inclined to the right, raising the right shoulder at the same time. We saw her together first on August 3, 1909, a few days after she had vomited so violently as to cause a severe gastric hemorrhage. The patient was cheerful and chatted volubly, and ordinarily did not give the impression of suffering. She said, however, that she always had more or less headache, "all over," but chiefly in the back of the head. We found papillitis in both eyes. Vision was considerably reduced in the right eye, but was quite good in the left. The eyeballs were both rather prominent. There was no nystagmus; nor was there any strabismus, although the patient mentioned frequently that she saw double, and once the diplopia continued all day. Dr. Adolph Rosenthal of the German Hospital, who examined her with us at the hospital, considered the diplopia to be due to incoordination of the ocular muscles. Inquiry elicited the statement that there was sometimes a numbness of the right half of the upper lip, but at this period we could not convince ourselves of any alteration of sensibility there (or anywhere else). The function of all the other cranial nerves was intact. When walking the patient now and then lurched very slightly to the left. During August, she would raise the right shoulder and incline the head slightly toward it on one day, and on another she might approximate the head and left shoulder. There was no incoordination of any kind in the upper or lower extremities. The tendon reflexes were all feeble at best; often the heel reflexes could not be elicited at all by any method; the knee-jerks were variable and required reinforcement, which would sometimes evoke both, and at other times only the left. The plantar reflexes were normal, the abdominal reflexes were absent on both sides. The pulse and the temperature were normal. The skull was not especially tender to pressure at any point, but the bone was perceived to be very thin and soft in the temporal regions, much more in the right than the left. *X*-ray plates seemed to confirm this impression; moreover, the sella turcica showed very faintly on them.

Deductions.—The papillitis, headache and vomiting were sufficient to prove the increase of intracranial pressure. The cause of this might be a tumor with or without hydrocephalus, or chronic hydrocephalus without a tumor. Lues was eliminated as far as possible. If a tumor was present the cerebellum seemed not unlikely to harbor it, for the manner of holding the head and the lurching, slight though it was, suggested that location, if they did not prove it. The fact that the headache was chiefly occipital seemed in some measure corroborative of this view. The absence of a disturbance of hearing excluded the cerebello-pontile angle from consideration; and the absence of nystagmus lessened the strength of our conviction that the tumor might be in the occipital fossa. On the one hand, there was a similarity to the symptoms of cerebellar disease; on the other, the absence of such frequent concomitants of cerebellar tumors as nystagmus and strabismus seemed to constitute a difference. This similarity with a difference induced us to regard a chronic hydrocephalus without tumor as not altogether improbable. The numbness of the right half of the upper lip, which the patient had mentioned only in response to an inquiry, could not weigh much in our balancing of the symptoms, because it was not present at this time.

Diagnosis.—As it was thought inadvisable to disregard the region where the atrophy of the bone was so conspicuous, a small incision was made, August 19, 1909, in front of the right ear. The bone was found to be as thin as paper. A slight slit was inadvertently made in the dura. Some of the subjacent brain substance was aspirated and examined under the microscope, and proved to be normal. A few days later 25 c.c. of cerebrospinal fluid were obtained from the right lateral ventricle through the same opening. It was reported to contain 0.2 per cent. of albumin and an excess of mononuclear leukocytes. We could not establish on this occasion that the ventricle was greatly dilated. On September 1 an incision was made on either side, midway between the external occipital protuberance and the apex of the mastoid process, and the bone opened with a small trephine. On the left side the same thinning of the occipital bone was found as in the right temporal region. On the right side the bone appeared normal. Substance was aspirated through each opening and submitted to Professor Ophüls, of Stanford University, who reported that "sections from both sides show cerebellum, no tumor." On the right side a hemorrhage occurred, so that the wound had to be packed with gauze. When two days later the gauze was loosened, there occurred a profuse flow of cerebrospinal fluid. The fluid continued to escape for ten days. The headaches, the vomiting and the pain in the eyeballs ceased and the patient was allowed to return to her home. When examined there a few weeks later the papillitis had disappeared, leaving the disks pale; the vision was 6/8 in the left eye and 6/10 in the right eye, as determined by Dr. Rosenthal. The patient took part in the work of the household and, although reported to be a trifle unsteady, with a little tendency to stagger now and then to the right, she was considered well until the end of July, 1910.

This subsidence of the symptoms after the discharge of cerebrospinal fluid had made us incline rather to the diagnosis of a chronic hydrocephalus without tumor. But the vomiting reappearing, occasionally at first with headaches, the patient was forced in August, 1910, to take to her bed again. She had to lie perfectly flat, as a pillow under her head would cause pain in the neck, occiput and eyes. At times there was tense bulging at the site of exploration in the right temporal and left occipital regions and well-marked fluctuation between the two on percussing the occipital area. September 23, 50 c.c. of cerebrospinal fluid were withdrawn from the right lateral ventricle through the temporal opening; vomiting and pain in the eyes immediately ensued and for three days there was a rise in temperature, the highest being 101 F. Occasionally some alleviation punctuated the patient's sufferings from vomiting and pain, so that she could be up and perform household duties. October 6 she was unconscious for fifteen minutes. November 23 we resumed our cooperation, one of us not having been able to see the patient for several months. The appearance of the disks, and the vision, had not changed during the year. Knee-jerks, ankle-jerks, and plantar reflexes were now all found to be perfectly normal. There was still neither nystagmus nor strabismus. The various tests for eliciting signs of disturbance of cerebellar coordination gave negative results. There was now a distinct diminution of tactile sensibility in the right half of the upper lip. This was said to vary: the patient said it was so marked at times that when she touched the right side of the upper lip with her finger and could not feel the lip she seemed to have lost her finger. This hypesthesia in the lip was most pronounced when the pain in the back of the head was most severe. The motor trigeminus was not affected. Deglutition was becoming difficult; the patient sometimes choked over her food. The pulse-rate was 120. There was no bulging through the opening in the skull at this examination. From November 25 to November 27 the patient could not swallow at all; a few drops of water were allowed to fall into her mouth from time to time. She was removed to the hospital, November 27 in the evening. The rate of the pulse was now between 130 and 140 and its beat was barely perceptible.

Further delay was evidently dangerous. It was therefore determined to examine the sites of the cerebellar punctures, one of which, by permitting the discharge of cerebrospinal fluid, had been so beneficial. It was hoped that this benefit might again be obtained by a repetition of the procedure and that the pressure on the medulla oblongata might be thereby relieved, thus permitting the patient to recover sufficiently to give an opportunity for a more extensive exploration of the cerebellum under less desperate conditions. The anesthesia in the distribution of the right trigeminus, as well as the

consequence of the former intervention on that side, invited to operation on that side first.

Operation.—Accordingly, a few hours after the patient entered the hospital an incision was made through the scar. The dura was very tense. Puncture of the cerebellum produced, after two fruitless attempts, rather more than an ounce of a clear, amber-colored fluid, the first portion of which, spurting under considerable pressure, was lost. The intradural pressure was plainly lessened by the evacuation of this fluid. Further punctures yielding no more, an incision was made following the scar over the left cerebellar hemisphere, and there was disclosed a purplish mass protruding through a small opening in the dura. It was very soft and vascular, but after some effort a firm hold was secured and it was extracted entire through the enlarged opening in the dura and the bone. After its removal normal cerebellum was in sight; it soon pulsated freely. The patient was pulseless when returned to bed, but before long she recovered and in a few hours was able to swallow with ease. Nothing occurred to interfere with her restoration to health. The anesthesia in the right trigeminal area has disappeared. The patient is now (February, 1911) attending to her domestic duties, besides being active in her father's business.

The tumor measured approximately 5.5 by 2.5 by 2 cm. Professor Ophüls reported that it was a glioma of the cerebellum. The fluid which was obtained from the right cerebellar hemisphere contained but little sediment, which consisted or red blood-corpuscles, some granular and a little crystalline blood-pigment.

The salient points in this case are as follows:

1. The therapeutic effect of puncture of the cerebellar hemisphere opposite to that which contained the tumor.

2. The failure of puncture and aspiration at the site of the tumor to reveal its presence.

3. The non-recurrence of papillitis when the other symptoms returned.

4. The atrophy of the skull, probably the effect of pressure.

5. The anesthesia in the face, which might well delude one as to the side of the tumor. Ziehen mentioned in a discussion[1] as very remarkable "a crossed trigeminus paralysis" in a case in which he had diagnosed a cerebellopontile tumor, which, however, was not found at the operation, and Oppenheim stated in the same discussion that he also had once seen a contralateral trigeminal paralysis.

CASE 2 (By L. Newmark; operation by Harry M. Sherman). —*Abstract.*—Intermittent headaches since 1906. Choked disks observed in November, 1907. Bilateral anosmia, pain in occiput and back of neck in March, 1908. In April, 1908, osteosarcoma on inner surface of trephine button removed from left prefrontal region. Permanent disappearance of headache and choked disks. December, 1910, removal of endothelioma of dura mater from same region.

It would seem in a sense to be an extreme mischance in localizing an intracranial tumor to discover it at last in the prefrontal region when it had been sought in the cerebellum. Yet such an error is not very uncommon, and in the course of the following notes it will appear how insistently at least subjective symptoms may direct one's attention to the back of the skull when the growth is situated in front. The tumor in our case was an endothelioma of the dura mater. Such a tumor is often a favorable object for surgery when it can be localized; but the diagnosis may be very difficult. Four cases observed by Nonne,[2] of Hamburg, illustrate this relation; in none of them was the tumor diagnosed, and in all it might have been removed with ease.

Symptoms.—The patient, a ruddy, robust Danish woman, aged 38, came under my observation at St. Mary's Hospital at the invitation of Dr. C. C. Mohun, March 23, 1908. Since "four weeks after the fire," that is, about May, 1906, she had been subject to paroxysms of headache, in the intervals between which she appeared to be well. The pain was formerly chiefly on the top, but of late commonly in the back of the head. Until the last attack of headache (which brought her to the hospital) the head would be drawn backward in the paroxysms and sometimes held retracted until the skin at the throat became sore from the stretching. The patient had had as many as three distinct attacks of headache in a single night, in which she would get on her knees and hold on to the upper part of the folding-bed, with her head drawn back. The head had remained thus retracted for a whole day at a time. In the attack, during which she entered St. Mary's, however, the head was inclined forward, so that the chin approached the chest, and in that position I found her, evidently in great pain, which, she said, she felt in the back of the head and neck, the back of the head being particularly painful on the left. The headaches often began with a "beating" in or behind the left ear. The patient had lost consciousness four or five times, not always, according to her husband, in a headache. There had been no convulsions. Ordinarily she did not vomit in the headaches, but during the last one she did, and, according to a witness, after the vomiting, a clear fluid "like water" came out of the nose drop by drop. Pain was felt often in the left eye, but not in the right. At times she would become blind for a moment. A few months before admission she could not see well after dark, so that after nightfall her husband had to lead her, but of late there had been an improvement in this respect. In November, 1907, Dr. James Franklin Smith had first observed choked disks.

Examination.—This disclosed bilateral anosmia. It was then elicited that the patient had observed the loss of the sense of smell several months before. Dr. Smith found no sign of a discharge of cerebrospinal fluid through the nose, such as the statement in the history suggested. The disks were both choked, the left a little more than the right. All the other cranial nerves were intact; all the reflexes and motor and sensory functions in the trunk and the extremities were normal. A tremor in the upper and lower extremities was noticeable. There was no exophthalmos, no strabismus, no real nystagmus, no cerebellar incoordination or staggering, no form of aphasia, nothing abnormal in the pulse or the temperature. Briefly, of the cranial nerves, only the first and second pairs supplied a clew; the functionally differentiated parts of the brain supplied none. The last assertion should perhaps be qualified; for the patient's husband declared that her character was changing. There was a sort of affected hilarity about her. I was furthermore struck by her indifference when I explained to her that an operation might be required to preserve her sight. The alleged change in her disposition and her inability to appreciate the gravity of her condition were taken into consideration later on weighing the arguments in favor of localizing the disease in the frontal lobe. Meanwhile, however, it was to the occiput that the patient's complaints drew our attention. By degrees, the severity of the paroxysm abating, the patient recovered from the prostrating headache with which she had entered the hospital, but still was cautious in moving her head until March 26. Then, although suffering no great discomfort in the daytime, she continued to have pain at night in the back of the head and neck, chiefly in the left half of the occiput. The pain was felt sometimes as far down as the upper dorsal region. The patient said that she could not lie on the left side on account of the tenderness in the back of the head on that side. The "beating" deep in the ear or behind it added to her distress; it was "like a clock." Tenderness to pressure was constant in the occiput on both sides, although it varied in degree on different days, and it was always greater on the left side than the right. Nowhere else in the skull was this tenderness found. The left frontal region was examined in this respect frequently and with special care. April 5, 1908, with the assistance of Dr. John Van Denburgh, the whole skull was percussed and auscultated, but no additional information was obtained. On the day before, the patient mentioned that she had had "little jerking movements of the head backward," and that she had felt them in the back of the head on the left side. April 5 I witnessed these movements, which were evidently due to short sharp clonic contractions of the muscles that retract the head. April 11 she vomited frequently, and it was

1. Neurol. Centralbl., 1907, p. 537.
2. Deutsch. Ztschr. f. Nervenheilk., xxxiii.

on April 13 that she felt the pain as far down as the upper dorsal region. She requested an operation, and April 15, when a hemorrhage appeared in the left disk, a sufficiently urgent reason was supplied to grant the request.

Diagnosis.—But where was the skull to be opened? The fundamental problem was the interpretation of the anosmia. This does not appear from the history to have been an early symptom, and it might have been caused by hydrocephalus, which in its turn might have been caused by a growth in the occipital fossa. Thus the combination of anosmia with tenderness and pain in the back of head and neck, and with spasms of the muscles that retract the head, would have been explained. The alternative was a direct pressure on the olfactory bulbs or nerves by a prefrontal tumor; but a single prefrontal tumor, unless it crossed the median line, would be expected to cause unilateral rather than total anosmia. There are abundant cases on record to show how fallacious tenderness of the occiput may be as a guide to diagnosis; yet the pain there, and the "beating" in the ear and the backward jerking of the head, were hard to disregard as indicative of the occipital position of the tumor. At length, however, the reflection that there was no impairment of the function of any organ lying within the occipital fossa determined the question in favor of the prefrontal region, in which judgment I was further confirmed by the reputed change in the woman's character. The subjective symptoms were allowed an influence on the decision as to which side of the skull concealed the tumor. The patient had finally called the left "the sick side:" the left disk was slightly more swollen than the right; so the left prefrontal region was chosen for the first exploration, despite the absence of aphasia in this right-handed person.

First Operation.—Accordingly, on April 16, 1908, Dr. T. E. Bailey trephined at a point about 4 cm. above the middle of the left supra-orbital ridge. The purpose was to probe the brain through the dura, and, if necessary, to aspirate particles of brain tissue for microscopic examination. From this point, furthermore, it would be feasible to tap the anterior horn of the lateral ventricle and to determine whether or not it was dilated. A puncture toward the base and median line was unproductive; a second, directed toward the occiput, encountered resistance at a distance of about 1⅛ inches; the instrument had entered something which seemed to be of the consistency of wood and a little force was required to disengage it. A week later a trephine was applied over the resistant substance, and when the disk was removed it was found that what the exploring instrument had encountered was a prominence on the inner surface of the bone, apparently an osteophyte, which had forced the subjacent dura rather deeply inward. The dura thus exposed was thickened. The opening in the skull was enlarged until normal dura was seen in all directions. The dura itself was not opened, as the removal of the projecting bone seemed sufficient to relieve the pressure on the brain. Dr. E. A. Victors was kind enough to prepare microscopic sections of the skull disk, and Professor Ophüls favored me later with the following report on the specimen:

Pathologic Report.—"Trephine button 22 mm. in diameter. Outer surface smooth, normal. On inner surface rough bony prominence forming a flat cone of 19 mm. base, projecting in the middle about 6 mm. On the rough surface there are small remnants of adhesions to the dura. The tumor evidently arises from the internal table and extends into the diploe for 3 to 4 mm. in an irregular fashion. The dividing line between tumor and diploe is rather indefinite. Section shows thick masses of lamellated, dense bone tissue with normal bone-cells. In the bony tissue there are large open spaces which, above toward the diploe, are filled with cellular bone-marrow, below in the tumor proper with a cellular tissue made up of large spindle-shaped cells with large vesicular nuclei and little intercellular tissue between them. Osteosarcoma of the skull."

Postoperative History.—A few days after the operation, having doubts as to the sufficiency of what had been done, I intimated to the patient that a second operation might be necessary, to which she replied that she felt very well and would assent to no such proposal. Indeed, she has never again suffered from the headaches and has no complaint about her eyesight. When she left the hospital just one month after the operation the swelling of the disks had become less by 3 diopters, and the beating in the left ear and the tenderness of the occiput had disappeared. Only the anosmia remained. In a few weeks more the swelling of the disks had completely disappeared; they were pale, but the patient was conscious of no defect in her vision. Through the opening in the skull, covered by the skin, a mass now protruded. The woman was very distrustful of her medical attendants, asserting that they wanted to experiment on her, and would not permit an examination of the protuberance on her forehead. No one could prevail on her to present herself again for inspection. The insensibility to the benefit she had received, and her perverseness toward those who offered to continue their efforts in her behalf, were declared by her husband to be foreign to her character. From the summer of 1908 until one day in June, 1910, when I journeyed to her home in the country to see her, she was lost to sight. On the day mentioned she was found to be in the enjoyment of good general health, but she complained that of late the swelling on the forehead had become tender. It seemed to be larger than it was two years before, occupied virtually the whole forehead, jutting over the eyebrow, and it pulsated like normal brain. At the edges of the opening in the skull the bone was tender when touched. The disks were still pale and clear. The sense of smell had not been regained. The patient's memory was stated by her husband, as well as herself, to have become very untrustworthy. The disfigurement by the swelling on the forehead was keenly felt; she was ashamed to go about and children ran from her in fright.

Cosmetic considerations, therefore, had their influence on the patient, and at length she entered the University of California Hospital, where, on Dec. 5, 1910, Dr. Harry M. Sherman removed a tumor which weighed 140 grams. This again was kindly examined by Dr. Ophüls, who reported as follows:

Pathologic Report.—Large nodular tumor about 8 cm. in diameter. The nodules on the surface are closely set, rather regular, from 3 to 5 mm. in diameter, large veins ramifying in the spaces between them. Sections show a thin superficial layer of ordinary fibrous tissue (probably the dura). The tumor consists of a thin framework of vascular fibrous tissue in which there are badly defined rounded spaces tightly packed with partly flat, partly fusiform cells, arranged more or less concentrically. No intercellular substance. These cells resemble those which were found in the medullary spaces of the piece of bone [i. e., the trephine button removed in 1908]. Alveolar sarcoma (endothelioma) of the dura mater.

As Nonne, in the article referred to above, calls the endothelioma of the dura mater benign, I questioned Professor Ophüls on the subject, and he replied: "These tumors are a sort of border-line affair of a very low degree of malignancy, if any. There are other types of sarcoma of the same class, such as the giant-celled sarcomata of the bones and others."

The defect in the patient's skull beginning 1 inch above the eyebrow, extends 3¼ inches backward from the eyebrow; laterally it extends from within half an inch of the median line to the level of the external canthus of the eye. The olfactory sense is not abolished; she can detect strong odors like that of lysol, but more delicate scents escape her. Her visual fields are about normal, according to Dr. Scott Franklin's tests, and her vision is a trifle less than 20/20 in each eye. Her memory is still considered by herself to be defective. Her conduct is certainly more amiable; but this may be due to the consciousness of an improvement in her appearance. Such was her condition on Feb. 7, 1911.

Dr. Sherman describes the surgical aspects of the foregoing case as follows:

Mrs. L. presented herself with a large tumor in the left frontal region. At its lower limit it lifted the eyebrow from the bone, at its upper it extended beneath the hair, and transversely it reached from the midline of the forehead outward as far as the external angular process of the frontal bone. Its general level was 2.5 to 3 cm. above the normal, and the skin covering it showed a broad stellate scar. The tumor pulsated, and it was not known whether it consisted of tumor tissue or was a cerebral hernia of the decompressive order. To determine this question, if it could be determined

before operation, a lumbar puncture was done. Only 6 c.c. of fluid were taken, under about normal pressure, but its loss gave the patient a severe headache and nausea and vomiting. The tumor seemed to be softer, but it was difficult to be certain about the change. All unpleasant symptoms lasted only a day or so. The operation planned was to be primarily exploratory, and secondarily curative, if possible, and an effort was to be made to get an improved cosmetic condition. In the hospital, where I kept the patient for a few days for observation, the nurses reported her as being cross, peevish and sometimes sullen.

Second Operation.—I circumscribed the tumor by a curved incision above it and turned down the skin flap, and this was not easy, for the deeper layers of the skin and the tumor were adherent closely, and the skin turned back was so thin, being only skin, that I feared for its vitality in the healing. This exposed the tumor, seen and recognized to be tumor tissue, and found to be growing from the margins of the opening in the skull made by Dr. Bailey at the first operation. Therefore, I circumscribed the tumor by a cut through the bone, really a slot started in a burr opening, and cut by a de Vilbiss forceps. This did not, however, cross below the tumor above the orbital margin, for there was no space, so here the tumor was separated from the bone and the latter trimmed down to sound tissue by rongeurs, making a skull opening 4 by 6 cm. The fingers then slipped in along the line of separation between the tumor and the dura mater, extradurally, to a depth surprising because it was unexpected. The tumor was easily drawn out; practically no hemorrhage followed; the cavity left would have readily contained a small fist. This cavity was lined below by the dura mater, which was pressed down into a huge hollow in the frontal lobe. Because of the size of the cavity I abandoned my plan of putting in a silver plate to represent the bone removed, and, because I could not believe it right to leave a vacant space in the cranium, nor yet to fill it with salt solution, I put in some gauze sponges, leading the strands of them out on the surface, and tacked the flap back in place with a few silkworm-gut sutures. The patient did well and the skin flap did not die. At a later time (eight or ten days) I reanesthetized the patient and removed the gauze tamponade and formally sutured the flap in place, draining the space underneath it by a single cigarette wick. Again I did not put in the silver plate, for I was not at all sure that it would not be necessary to remove more bone, and that is my feeling yet.

Following the last intervention there was normal healing and the patient left the hospital well, but with a depressed area, which pulsated, in the place of the tumor.

It was noted by the nurses in the ward that the preoperative surliness became a postoperative sunniness, and scowls and complaints changed to smiles and compliments—a complete dispositional reversal.

THE TREATMENT OF ACUTE GENERAL PERITONITIS

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In a discussion on the great advances in the science of medicine, a friend, a professor of pathology, said: "Yes, great advances are being made in pathology and bacteriology and by laboratory research, but the clinicians are making little headway; they are in much the same position they were a generation ago. What have the clinicians done, which will compare with the discovery of antitoxin and the prevention and cure of diphtheria by its use?" I challenged the statement at once.

I said: "I congratulate the research workers on the splendid work they have done and are doing, but when you assume that the laboratory research men are the only ones who are adding to the science of medicine, you simply show that your knowledge of medical progress is limited to your own field and that you do not realize the splendid scientific work being done by your clinical colleagues. What have the clinicians done which will compare in value with the discovery of the antitoxin for diphtheria? I will tell you. They have learned how to recognize general peritonitis, and they have learned how to treat it, so that the mortality, which a generation ago approached 90 per cent. or more, is reversed and we are now able, under favorable conditions in patients operated on early, to save almost 90 per cent., a showing which is quite comparable to the splendid achievements of the antitoxin of diphtheria."

I have been an interested spectator, and, to a limited extent, participant in this wonderful change. I can recall almost from memory most of the important milestones in the progress of events.

Mikulicz in 1880, in operating for the first time on a perforating stomach ulcer, in a way led to the modern surgical treatment of general perforative peritonitis. The value of this work was not at once recognized; in the next decade little was done in the way of operative treatment in cases of general peritonitis. As late as 1894 von Bergmann's assistant, Schlange, in Berlin, in discussing the subject said: "I want especially to emphasize the statement that laparotomy as a treatment of general suppurative peritonitis should be rejected." Beginning with about 1894 a good deal of active work was done in the operative treatment of peritonitis. Stühler of Strasburg (Strasburg Klinik) in 1890 collected reports of seventy-eight cases of drainage of the peritoneum in cases of peritonitis with fifty recoveries and twenty-eight deaths. Körte[1] in 1892 reported nineteen patients operated on for suppurative peritonitis with six recoveries and thirteen deaths. Between 1892 and 1897 a considerable advance was made, so that in 1897 Körte in a second article, which really lays down the foundation of our modern operative treatment, was able to present reports of 133 cases with fifty-one recoveries and eighty-two deaths, collected from Lennander, Rotter, Jalaguier, McBurney, Abbe and Richardson.

I was fortunate enough to be present at the Congress of American Physicians and Surgeons in Washington in 1897 when Senn, Abbe, McCosh, Fowler and Welch in a symposium on peritonitis brought the subject down to that date. In 1900 A. Tietze[2] reported the work from the Mikulicz clinic. He presented some interesting facts.

Mikulicz collected from the literature from 1885 to 1893 reports of thirty-five cases of general peritonitis with thirty-four deaths and one recovery, a mortality of 97 per cent.; from 1894 to 1896, sixty-eight cases with thirty-two recoveries and thirty-six deaths, a mortality of 52.94 per cent. He collected altogether reports of 231 cases with eighty-six recoveries and 145 deaths, a 37 per cent. mortality.

In 1903 Joseph A. Blake[3] reported the treatment of diffuse peritonitis by early incision, with removal of the focus of suppuration and stopping any further leak, lavage of the peritoneum and closure of the peritoneal cavity without drainage.

In 1904 George and Russell Fowler[4] reported 100 operations for general peritonitis in the previous three years with sixty-seven recoveries and thirty-three deaths. They emphasized the importance of the now well-known

1. Körte: Arch. f. klin. Chir. (Langenbeck's), 1892, xliv, 612.
2. Tietze, A.: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1900, v, 15.
3. Blake, Joseph A.: Ann. Surg., 1903, xxxviii, 265.
4. Fowler, G., and Fowler, R. W.: Medical News, May 28, 1904.

and widely adopted Fowler position in the after-treatment of these patients.

In 1905 Noetzel,[5] an assistant in Professor Rehn's clinic at Strasburg, published an article which brings the subject very close to its present stage of development. He advocates:

1. Careful and rapid operating.
2. Removal of the existing pus with irrigation.
3. The removal of the cause of the suppuration or closure of any existing leak.
4. Drainage.
5. Washing out of the stomach.
6. Rectal injections of normal salt solution.
7. Withholding of morphin when possible.

The treatment outlined by Noetzel, plus the Fowler position, gives us the modern treatment of peritonitis most generally adopted. About this same time Murphy formulated the method of treatment which is widely known by his name. To quote from LeConte,[6] the essentials of Murphy's technic may perhaps best be stated under six headings, viz:

1. The rapid elimination of the cause of the peritonitis.
2. Drainage by rubber tube of the lowest part of the pelvis.
3. Elimination of all time-consuming procedures at time of operation.
4. The Fowler position.
5. The absorption of large quantities of water by the rectum.
6. The prevention of peristaltic movements of the intestines by withholding of all food and liquids by mouth.

LeConte says: "While the procedures of Murphy do not present anything particularly new, he has assembled in his technic all of the good things to do, and has eliminated the unnecessary or harmful ones." There can be no doubt but that the enthusiastic advocacy of the scheme of treatment which Murphy has formulated, has accomplished a great deal of good.

To-day the discussion of the treatment of peritonitis might well be considered under four heads:

1. The saline cathartic treatment advocated by Tait, and especially by the gynecologists, which is really a treatment of value, not for peritonitis, but for one of the common results of peritonitis, i. e., paralytic ileus.
2. The rest and starvation treatment emphasized by Ochsner, which is of value, not in general peritonitis, but in local peritonitis to prevent its becoming general.
3. The operative treatment of Blake: rapid elimination of the cause of the suppuration, washing out of the peritoneal cavity with normal salt solution and closure without drainage, unless in the presence of gross lesions demanding it.
4. The operative treatment emphasized by Murphy: rapid removal of cause, drainage without washing out of the peritoneal cavity, and continuous irrigation by rectum with normal salt solution.

I hope to show that all of these methods have their value and that there is a fifth method, or combination of methods, the result of a better and simpler assembling of the various means at our command.

I. THE SALINE CATHARTIC TREATMENT FOR PERITONITIS

In what class of cases and under what circumstances is the saline cathartic treatment indicated? Patients die from peritonitis from three causes: 1. General sepsis with bacteremia. 2. From a sepsis due to absorption of toxins from the products of infection in the peritoneal cavity. 3. From absorption of toxins by the mucosa of the intestines from the decomposition which goes on in a paralyzed alimentary tract—intestinal toxemia.

In gynecologic work, in operations on the tubes and ovaries, Tait and other gynecologists found many cases in which, after the operation, the patient would become tympanitic, because of paralytic ileus, usually from a local pelvic peritonitis, often of not severe degree, and if let alone many of these patients died of paralytic ileus from absorption of the toxins developed within the paralyzed bowel. These men soon learned that if they could get the bowels to move, they would usually save their patients. This condition of paralytic ileus is a very common one, varying greatly in degree as to the severity of the symptoms from simple so-called gas pains to complete obstruction, and may complicate many lesions and operations involving the peritoneum. In the cases of paralytic ileus due to a local peritonitis, or a peritonitis of mild degree, like that associated often with a gonorrheal infection of the uterine appendages, the paralytic ileus with its accompanying danger of absorption of toxins from the bowel can often be controlled by saline cathartics, enemas and the use of agents such as strychnin to stimulate peristalsis. In these cases the saline cathartic treatment is often the most valuable treatment that can be employed. Not infrequently, too, in the post-operative care of general perforative peritonitis, as I shall attempt later to show, this cathartic treatment, to overcome paralytic ileus, may be indispensable. Of course, no one who understands the principles on which the treatment of peritonitis is based would for a moment consider the employment of the saline cathartic treatment in a case of perforative peritonitis before operation.

II. THE SO-CALLED REST AND STARVATION TREATMENT

This is the Ochsner method. This method has a rational scientific basis and is of great value in certain cases. It is, however, not properly understood, and is often improperly employed. What is the scientific basis for this method?

As Stokes and Sahli years ago pointed out, the inhibiting of peristalsis by the use of opium, the withholding of food and cathartics and the washing out of the stomach favor the localization and walling off of a suppurative focus in the abdomen, and there can be no doubt that a local peritonitis can often be kept a local process, and a general infection prevented, by this rest and starvation treatment.

The rest and starvation treatment is indicated: (1) in cases of acute abdominal lesions of uncertain diagnosis in which it is thought best to watch for a time their development; (2) in cases of local peritonitis in which for some reason operative interference is not indicated; (3) as I shall show, in the after-management of a case of peritonitis, in which operation has been done. It is, on the other hand, never indicated as the treatment of a patient with general perforative peritonitis.

III. THE OPERATIVE TREATMENT OF BLAKE

Blake has shown that in a large proportion of cases, if the perforation causing the peritonitis is properly closed, or the focus of infection causing the peritonitis is completely removed, and the noxious pus and toxins washed out of the peritoneal cavity with normal salt solution and the peritoneal cavity closed without drainage, the patient goes on to a recovery. This treatment

5. Noetzel: Beitr. z. klin. Chir. (Bruns'), 1905, xlvii, 241.
6. Le Conte: Ann. Surg., 1906, xliii, 231.

shows the great power possessed by the peritoneum of protecting itself against pus infections.

Dr. Blake has kindly given me the following outline of his management of cases of general peritonitis:

It is well to divide these cases into two classes for treatment: first, those in which the peritonitis is due to a dissemination of the infection from an infected organ, such as an appendicitis; and in the second group, those cases in which the peritonitis is due to a perforation or rupture of the alimentary canal.

The first class can be further subdivided into two classes: one in which there has been no localization of the infection and the process is evenly disseminated throughout the abdomen. In this class, when the cause of the peritonitis, as the appendix, for instance, has been removed, there is little or no difference in the appearance of the various portions of the peritoneum. In these cases I consider it unwise to attempt to drain the entire abdominal cavity, and simply put a drain through the wound in order to avoid mural abscess formation. Also, unless the exudate is very thick, I do not wash.

In the second group there has usually been pocketing and the formation of local abscesses lined more or less with necrotic fibrin. In these cases I wash out and drain the pockets. Inasmuch as the process has usually pocketed in the pelvis, the drains usually go to the bottom of the pelvis.

In the second class, namely, cases of peritonitis due to perforations, I uniformly wash the abdomen out in order to remove the material extravasated from the alimentary canal. In these cases I employ the same rule for drainage as in the cases proceeding from infected organs, that is, drain when there is necrotic material remaining in the abdomen; otherwise, no drains.

To resume: My treatment is practically the same as that I advocated in Chicago in 1908, with the exception that I do not wash quite as much. For instance, patients with only a seropurulent exudate are not washed at all; neither are they drained:

My rules for employment of drains are as follows:

1. Never use drains unless there is dead material which will remain as a nucleus for continued infection.
2. When it is necessary to drain, use a large and competent drain. For this purpose I use a double rubber drainage tube, one limb of which is fenestrated, and through this limb a wick of gauze is passed for capillary drainage.
3. Drains, when used, should be left in until all necrotic material has escaped, when they can be rapidly removed.

I have given up the use of cigarette drains, considering them inefficient and therefore useless. A short rule I sometimes use is, drain when you have to drain; otherwise don't drain at all.

IV. MURPHY METHOD

The Murphy scheme of management is the one most widely employed in this country at present. Murphy emphasizes the importance of tubular drainage; strongly condemns irrigation of the peritoneal cavity; insists on continuous irrigation with normal salt solution by rectum, and employs the extreme Fowler position, having the patient sit up in bed. The remarkable results which Murphy has obtained by his method certainly furnish a very strong argument and constitute certainly one of the reasons for its extensive adoption. I do not think that it is well to be guided entirely by statistics in a matter of this kind, however, and the results of his early work—twenty-nine cases of general peritonitis with but one death—is probably the accidental grouping of a large number of favorable cases which will probably not soon be repeated.

My own conclusion after studying this matter with a good deal of care is that these four methods—the saline cathartic method of Tait, the rest and starvation method of Ochsner, the Blake scheme and the Murphy scheme—all have definite elements of value and fields of usefulness. On the other hand, the value and importance of these methods have often been much exaggerated by their partisan advocates, and the real value of other schemes belittled to the disadvantage of their patients.

In the light of the evidence now before us, what should be our scheme of management of cases of general peritonitis?

DIAGNOSIS

Diagnosis must be made early, within the first few hours, certainly within the first twelve, if we are to hope for much from surgical interference. This diagnosis must be made early from a few data: pain, tenderness, muscular rigidity. We cannot afford to wait for a high leukocyte count, for a marked increase in temperature, for a tympanitic abdomen and the thready pulse and dusky face of dying peritonitis. This is true especially of perforative peritonitis from the alimentary canal. Take a case of typhoid fever with perforation. If the patient is to be saved, operation must be performed because he has pain, tenderness and a rigid belly. One must not wait for the tympany and thready pulse, which are really not signs of disease, but signs of death. This sort of procrastination reminds me of the medical men who bring me cases of carcinoma of the breast, which they have watched for months patiently to see the case develop glands in the axilla, a retracted nipple and evidence of cachexia, before making up their minds as to the diagnosis of malignancy.

SURGICAL MANAGEMENT

In discussing the modern surgical treatment of peritonitis and attempting to estimate its value, we must assume that we have made a moderately early diagnosis and that the surgical interference is undertaken within a reasonable period after the onset of the peritonitis. I have frequently been called to operate in neglected cases, in which the patient was blown up like a barrel, with pinched face, cold extremities and without a radial pulse. I believe in giving a patient with peritonitis the benefits of an operation, if there is the least possible chance; on the other hand, it is a mistake to operate on patients who are evidently *in extremis*. The most important function for us to perform, in the propaganda for better medical management of peritonitis, is to teach the importance of early diagnosis.

What shall be the scheme of surgical management? I should like to discuss this under several heads, viz: (1) anesthesia; (2) incision; (3) proper surgical disposal of the perforation or focus of infection; (4) testing the peritoneal cavity to determine whether the peritonitis is local or general; (5) when there is free pus or noxious material in the general cavity, its removal by irrigation with normal salt solution; (6) drainage; (7) surgical dressing; (8) after-treatment—the modified Fowler position; (9) intermittent salt solution per rectum; (10) washing out the stomach; (11) question of medication, morphin and strychnin; (12) water and food by stomach; (13) paralytic ileus and the saline cathartic treatment.

1. *Anesthesia.*—The normal anesthetic in these cases is drop-ether, properly given. In cases in which the patient is in very bad condition, nitrous oxid gas should be employed, unless there is a heart lesion, and then ether is safer.

2. *Incision.*—The first incision should be made over the suspected focus. As a muscle-splitting incision for an appendix case, or a median line incision above the umbilicus for a stomach or duodenal case.

3. *Perforation.*—The perforation or leak must be so handled as absolutely to prevent any further leakage. I would be very insistent on this point. I have too often seen cases in which the peritoneal cavity was simply opened and drained without closing the leak permanently, and in which the patient was almost certainly lost because the leak continued. The teaching that if it is difficult and time-consuming, the leak should not be sought for and closed, is bad teaching. I should say that it is so important for the safety of our patient to close every leak or perforation of the alimentary canal causing peritonitis—that a most thorough closure should be obtained even at the cost of some risk and time. It is only in extremely difficult cases, with patients in such bad condition that they will evidently stand nothing in the way of operative interference, except an incision and the introduction of a drain, that we should make an exception to the rule. In cases of peritonitis from suppurative foci, other than the alimentary canal, as the uterine appendages, it is desirable to remove the focus entire, if the condition of the patient permits; if the patient's condition is bad, we can trust to drainage alone with somewhat better chances than in the cases with alimentary canal perforations.

4. *Testing the Peritoneal Cavity to Determine Whether the Peritonitis is Local or General.*—This, to my mind, is one of the most important and interesting developments in the modern technic. As an illustration let me cite two cases of appendicitis.

CASE 1.—A young man of 20 was brought into the hospital with the diagnosis of appendicitis. He had been ill several days; from the history, a perforation had occurred a few hours before. I operated at once and found a perforated appendix with free pus about it. This was removed and the stump invaginated into the cecum. I then took a female glass catheter and tested the abdominal cavity. I placed my thumb over the open end, introduced the point into the cul-de-sac, removed my thumb for an instant and then replaced it and withdrew the catheter, employing it in much the same way that one does a glass pipette in picking up urine from a bottle. As I withdrew the catheter I found the lower 5 or 6 inches full of creamy pus. I then knew that I had a free general peritonitis to deal with and handled it accordingly.

CASE 2.—A boy of 10 gave much the same history. I operated on him in the same way, and when I tested his cul-de-sac found nothing in the catheter except a small amount of clear peritoneal fluid, and I therefore handled this case as one which was still limited to the region about the cecum although the pus was free in that part of the peritoneal cavity.

5. *Pus in the General Peritoneal Cavity.*—When there is free pus or other noxious material widely disseminated in the peritoneal cavity, I believe that it should be removed by irrigation. No one would doubt the advisability of washing beer and sauer-kraut and wiener-wurst out of the peritoneal cavity, in a case of perforating ulcer of the stomach; why should we not do the same for fecal pus or any pus?

When I have tested the peritoneal cavity with a glass catheter in the way I have described and found free pus, I then make a small buttonhole counter-opening in the median line just above the symphysis; through this a large glass tube is carried to the bottom of the cul-de-sac; then through the main incision, whether for appendix or stomach, another similar tube is carried to the seat of the perforation or focus, and this is attached by a rubber tube to an irrigator filled with normal salt solution at 112 F. and the peritoneal cavity is flushed out with several quarts of this irrigating fluid, until the fluid comes out perfectly clear. Practically no time is lost in this part of the operation as we are closing the main incision while the water is running.

6. *Drainage.*—Rubber tubes should never be used in these cases for drainage, at least unprotected rubber tubes. Cigarette drains are much to be preferred. A long cigarette drain made of a small rubber tube about as large as a No. 10 or 12 catheter, about which gauze and gutta-percha tissue is wrapped, until it is the diameter of a lead pencil or little finger, is carried through the small buttonhole in the median line to the bottom of the cul-de-sac. Similar drains are carried to the point of closure of the perforation or removal of the inflammatory focus and the rest of the main wound is closed.

6. *Dressing.*—The surgical dressing should be a copious, moist, not wet, dressing of hot boric solution. A moist dressing picks up the discharge better than a dry dressing. These dressings should be changed every six to twelve hours, as demanded by the amount of discharge—usually twelve hours is often enough—sometimes twenty-four.

8. *Position.*—The Fowler position is of much value for these patients, but unfortunately an exaggerated position has often been insisted on to the great discomfort and disadvantage of the patient. I am sure that we have obtained all the possible benefits of the position by allowing the patient to lie flat in bed and elevating the head of the bed from 18 to 20 inches on two chairs. In order to prevent the patient from sliding down in bed a bolster is placed below the buttocks and held fixed to the head of the bed by strips of roller bandage. I should like to emphasize the importance of this method of using the Fowler position. I have seen patients positively tortured by being compelled to sit up in bed because the attending surgeon has been led to believe that this position was indispensable to the modern method of treating peritonitis.

9. *Saline.*—I think that we are all agreed that furnishing these patients with a large amount of fluid by the bowel is one of the important factors in securing for us our improved results. This matter has, however, been greatly overdone. Continuous irrigation by complicated apparatus is often insisted on, much to the unnecessary discomfort of the patient. The presence of a tube constantly in the rectum is annoying. What we desire to accomplish is to furnish the patient a large amount of water so that the kidneys can act well and excrete the toxins, and so that the system will have enough fluids for the comfort of the patient. This can be done by interrupted rectal irrigation with much greater comfort to the patient and with all the benefits that can be obtained from the continuous irrigation. The continuous irrigation, if pushed, may be a positive danger, sometimes producing edema of the lungs and of the extremities. The rule is to give from 6 to 16 ounces of normal salt solution every two to four hours, to be retained, and a cleansing enema once or twice a day.

10. *Stomach Washing.*—If the patient vomits repeatedly, the stomach should be washed out. I do not believe, however, in making gastric lavage the rule. If the vomiting persists, the lavage should be repeated. Great care should be taken to prevent, if possible, the development of acute dilatation of the stomach, a condition very similar to paralytic ileus. If the patient does not vomit, or if the vomiting is slight and soon ceases, the patient should be given water by the mouth, at first in small amounts, and as the conditions improve this can be increased with a corresponding decrease in

the amount given per rectum. If at the end of twenty-four hours after the operation the general condition is good, milk and vichy in small amounts—an ounce each—every hour, can be begun.

11. *The Question of Medication.*—Morphin should as a rule be withheld; and still, in a large minority of cases, when the pain and restlessness are great, it is often of great benefit, giving the patient sleep, better respiratory action and increasing his chances of recovery.

12. *Ileus.*—Paralytic ileus is sometimes a serious or even fatal complication. It is here that proper early use of saline cathartics has been of value. Most patients have more or less gas pains. These should be handled by stimulating injections given low in the rectum; I usually use magnesium sulphate and glycerin and water in equal parts. Where the distention is considerable and persistent, saline cathartics in small repeated doses, with stimulating enemas and strychnin in moderate doses, should be employed. In a few cases secondary operations for localized abscesses will be necessary, and in a few cases in which the ileus persists enterotomy will be required.

I have found that one of the most valuable means of combating paralytic ileus is castor oil in small and repeated doses. I usually give a teaspoonful every hour until peristalsis, with expulsion of gas and feces, is secured.

I believe that following out this general scheme, we can, in cases early diagnosed and early operated on, succeed in saving a very large percentage of our cases of general peritonitis. And when our laboratory colleagues ask us what clinical surgery has done, we can tell them that for one thing it has solved the problem of peritonitis; that under favorable conditions it can save 90 per cent. of these patients who but a few years ago were almost certainly doomed to die.

150 Michigan Avenue.

RECONSTRUCTIVE ENDO-ANEURYSMORRHAPHY: A CASE REPORT

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History.—O. K., a prisoner in the Zone penitentiary at Culebra, Canal Zone, a Jamaican negro, aged 27, presented a history of syphilis from 1903, the only evidences of which to be noted at the time of examination were a moderate general lymphadenitis and slight arteriosclerosis. This man received a gunshot wound of the right leg on the night of Dec. 31, 1909, while attempting burglary. The missile, a 38-caliber revolver ball, entering 2½ inches above, and on a plane ½ inch posterior to, the upper extremity of the fibula, in the erect position, direction inward, and slightly forward and downward, becoming imbedded in the internal condyle of the femur. The patient was admitted Jan. 1, 1910, to Culebra Hospital. The wound healed without suppuration and the patient was discharged from hospital Jan. 25, 1910. He worked in the chain-gang building roads until Aug. 13, 1910, when he was readmitted to the hospital. He stated that during April he noticed a slight swelling in the popliteal space, which very gradually increased in size, and that later he began to have some pain back of his knee, which came on at intervals; that these attacks of pain later increased in frequency and severity until on admission the pain was constant. There was also, at this time, considerable swelling of the leg, due to pressure of the tumor on the popliteal veins. Examination showed an expansile tumor, a bruit and all the classical signs of aneurysm, The patient was put to bed with the knee slightly flexed and elevated, and was kept there until September 15. The rest and posture relieved the pain and swelling of the leg somewhat, but the aneurysm increased perceptibly in size during the month he was at rest.

Operation.—Sept. 15, 1910: A tourniquet on the thigh made the operation practically bloodless. When the aneurysm was opened much lamellated fibrin was found; this was removed and the sac washed out and found to be about 4 by 2¾ by 2 inches in size. The arterial openings, i. e., the point of entrance of the popliteal artery into the sac and its point of exit from the sac, were about an inch and a quarter apart. As regards classification, the aneurysm should probably be considered as of the spherical type, from its evident mode of origin and from its shape. At the same time it partook of the character of a fusiform aneurysm, in that the arterial openings were an inch and a quarter apart, and that there was no groove or furrow between these openings to mark definitely the anterior wall of the artery. The character of the sac walls differed very much in different areas. The anterior wall of the sac, between the arterial openings and for some distance on all sides of this point, seemed firm, elastic and resistant, while from this area it gradually thinned out until the posterior wall of the sac was as thin as tissue-paper. A point of particular interest in this case was the presence of a second sac or diverticulum opening off the main sac cavity on its anterior surface at a point ¼ inch below the proximal arterial opening and on a line between the two arterial openings. Or, it might be said that this second sac opened off the anterior wall of the artery, except for the fact that the artery was so flattened out and obliterated that it seems simpler to call it the anterior wall of the sac. This diverticulum was an aneurysm of true spherical type, about ¾ inch in diameter, its opening into the large sac being about ⅓ inch across. It contained no clot or fibrin and its walls seemed firm and elastic, and lined with arterial intima over its whole extent. It was wiped out firmly with a pledget of gauze with the idea of encouraging the deposition of fibrin within the sac, and in the subsequent proceedings its presence was disregarded. The two arterial openings were on the same level, were easily accessible at the bottom of the field of operation, and, in the belief that there was enough firm sac wall available, the artery was reconstructed. For this purpose interrupted sutures of fine chromic gut were used, placed about $^{3}/_{16}$ inch apart, using very fine, full-curved round intestinal needles. After reconstruction of the artery the sac was obliterated by layer on layer of continuous plain catgut sutures, following Matas' second method of closure, leaving the sac buried in the wound without inversion of the skin-flaps, and without drainage. After the second row of continuous sutures was in place the tourniquet was removed. Slight oozing of bright red blood showed immediately in the suture line, but it soon stopped and the operation was completed and the leg dressed on a straight posterior splint. There was immediate restoration of circulation to the leg, pulsation being felt in the posterior tibial and dorsalis pedis arteries.

Postoperative History.—From the time of the operation on there was never any difference in temperature or sensation between the foot and leg of the operated side and that of the sound side. The skin sutures of silkworm gut were removed on the twelfth day. The patient was kept in bed with leg on a posterior splint for three weeks, when he was allowed up, with a posterior molded felt splint in place for another week to prevent his flexing the leg. He was discharged from hospital October 16 and returned to work in the road-building gang at once. The man was seen repeatedly after he left the hospital by me, the last time on Feb. 19, 1911, and he stated that the leg had given him no trouble, and he had worked every day since he left the hospital.

October 14, two days before the man went out of hospital, and twenty-nine days after the operation, his leg was examined carefully in regard to its circulation, and it was found that the pulsation could be felt as readily in both the posterior tibial and the dorsalis pedis in the right (operated) leg, as in the left; at least, if there was any difference in the strength of impulse in

the two sides it could not be made out by palpation. (We did not test the blood-pressure otherwise.) No impulse could be felt in the reconstructed portion of the popliteal, owing to scar tissue.

Professor Matas[1] brings up the question as to the continued competence of the reconstructed portion of the artery, and in order to decide the point, if possible, the man was reexamined again Feb. 19, 1911. He was very muscular and quite fleshy. Impulse in the popliteal at the seat of operation could not be made out. The posterior tibial and dorsalis pedis could be made out only with considerable difficulty on the right side, while they were distinctly palpable on the left, the impulse even being visible in the left dorsalis pedis.

Now to determine whether the stream causing the faint impulse really came through the reconstructed artery, an assistant made digital pressure over it while the branches were palpated and it was found that as long as the pressure over the popliteal continued there was no impulse in the branches, but that pulsation immediately returned when the pressure was discontinued, proving that the lumen of the reconstructed artery, while it has become considerably narrowed, still carries part of the blood-supply to the foot and leg.

This observation would seem to bear out the contention that in these cases of reconstruction in which there is permanent recovery, the reconstructed portion of the artery becomes obliterated ultimately, remaining patulous long enough, however, to carry on the circulation until the collaterals develop.

Regarding the second aneurysmal sac, which was left as a spherical aneurysm on the anterior wall of the reconstructed portion of the popliteal, I had serious misgivings at the time as to the wisdom of the treatment of it, and that was the reason for keeping the parts at rest for so long after the operation. However, its walls seemed to be about as firm as the material from which the artery was reconstructed and it impinged on the solid structures at the back of the knee, giving it support, and there were hopes that it might be obliterated, which, in the light of the last examination, seems to have been its fate.

The above is offered for what it is worth as an argument in favor of the reconstructive operation. The conditions presenting in this case certainly cannot be considered to have been ideal for this operation, yet the results have been all one could wish.

1. Private communication in reference to the case reported.

A SIMPLIFIED METHOD OF STAINING BACTERIA, CAPSULATED BACTERIA IN BODY FLUIDS, AND PREPARATIONS FOR OPSONIC COUNTS

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For over four years I have used with great satisfaction the following method for the staining of bacteria and body fluids in place of Löffler's methylen-blue, in the staining of preparations for the opsonic count instead of Leishman's or Wright's blood-stain, and in the staining of capsulated bacteria. I describe it here in the belief that it may be of help to clinicians as well as to laboratory workers.

PREPARATION OF STAINING SOLUTIONS

The preparation of this stain requires no saturated alcoholic solutions, nor the troublesome "1 to 10,000" aqueous solution of caustic potash necessary in the preparation of Löffler's methylen-blue solution. It is easily prepared in a few minutes by any physician or druggist and keeps indefinitely. The addition of a few crystals of sodium carbonate may be necessary from time to time to counteract the acidity of the corrosive sublimate which is used as a fixative.

1. Saturated aqueous solution of corrosive sublimate (to be used as a fixative).

2. Aqueous methylen-blue solution prepared as follows:

℞.	gm. or c.c.
Methylen-blue ("medicinally pure")	1
Sodium carbonate, U. S. P., cryst.	1
Water	100

The dye and the sodium carbonate are thoroughly dissolved in the 100 c.c. of water by shaking. If not thoroughly dissolved there may be a precipitate on staining.

These solutions are best kept in bottles wide-mouthed enough to allow the passage of slides or cover-glasses and stoppered with corks or glass stoppers.

METHOD OF STAINING

Staining of Single Preparations.—The smear is made on a slide or cover-glass and allowed to dry in the air:

1. Fix (by immersing the preparation in the saturated corrosive sublimate solution for from ten to twenty seconds).

2. Wash in running water.

3. Stain with the methylen-blue solution described above, by immersing the smear in the staining solution for from five to thirty seconds.

4. Wash thoroughly in running water and dry between layers of filter-paper; mount and examine in the ordinary way.

Staining of Several Preparations at One Time.—In the laboratory where it is necessary to stain many preparations the following method is recommended:

The smears are made on slides, are labeled with a blue glass pencil (A. W. Faber) and dropped in a glass slide box.

1. Fix by pouring the saturated corrosive sublimate over the slides, filling the glass slide box with it, and allowing it to act for from ten to twenty seconds.

2. Pour off the corrosive sublimate (back into the bottle).

3. Wash thoroughly in running water, holding the slides in the box by placing the fingers over the top of the box.

4. Stain with the methylen-blue solution[1] (described above) for from five to thirty seconds, by pouring the solution over the slides, filling the slide box with it.

5. Pour off the methylen-blue solution (back into the bottle).

6. Wash thoroughly in running water.

7. Dry between layers of filter-paper, and examine in the ordinary way.

Staining of Preparation for the Opsonic Count of Bacteria Other Than Tubercle Bacilli.—The method just described for staining several preparations at one time I have used since August, 1906, in staining prepa-

1. In the staining of capsulated bacteria constant good results are obtained when the preparations are overstained, that is, allowed to remain in the stain for from five to ten minutes instead of from five to thirty seconds, and are not so thoroughly washed in water.

rations for the opsonic count of bacteria, other than tubercle bacilli, in place of Leishman's or Wright's blood-stain. It has given great satisfaction from the standpoint of results, economy, and saving of time. The great number of slides I had to stain daily for the opsonic count formerly meant the spending of hours in staining alone, while with this method it is now a question of minutes. A large amount of staining fluid is consumed when the "blood-stain" is used, because when once applied it cannot be used over again, while this methylen-blue solution can be used over and over again indefinitely; the economy is obvious. As to results, the staining of leukocytic granules (basophilic) with any of the standard blood-stains interferes with the rapid counting of the bacteria, while with this stain the protoplasm is pale blue, granules are not stained at all, and the bacteria and nuclei are stained deep blue. Hence the counting is rapid and without errors. This method, then, gives brilliant results, is economical, and saves a great deal of time..

Method of Staining Capsulated Bacteria.—Thin preparations are made from body fluids (saliva, pus, exudates, etc.), are fixed, and stained by either of the two methods described, for single preparations or for staining several preparations.[1] The capsules show up invariably very distinctly. They are stained pale blue, while the bacteria are stained deep blue. Good results have been obtained, not only in smears from body fluids, but also in smears made from cultures (especially from the water of condensation) of the *Bacillus mucosus capsulatus*, the *Streptococcus mucosus capsulatus* and the pneumococcus. The advantages of this method of staining capsulated bacteria as compared with any other method I know of are obvious and need no further comment.

GENERAL APPLICATION AND RESULTS

This stain can be used in every case in which Löffler's methylen-blue would be used. It has all the advantages of the latter minus the disadvantage due to heat fixation. Thus, in smears of pus or body fluids, the protoplasm of the individual pus cell is stained light blue and its outline is definitely made out. Intracellular organisms (gonococci, meningococci, etc.) are seen within the protoplasm and not in a blank space around the nuclei of the pus cell, as is the case with Löffler's stain.

Its use in the staining of blood-smears for the opsonic or phagocytic count has given me more satisfactory results, is more economical, and takes considerably less time than any other stain(or blood-stain) recommended for this purpose.

Its use as a stain for capsulated bacteria, the ease with which it can be applied generally, and the more constant results obtained with it, will make this stain, it is hoped, a useful addendum to the present standard laboratory stains.

Finally, because of the ease with which this staining solution is prepared, the cleanliness with which it can be handled, and its advantage of requiring no Bunsen burner or flame of any sort, it is hoped that this method of staining will be of help to the clinical man in keeping up bacteriologic examinations in his office in the routine of his daily practice, without having to resort to a fully equipped laboratory for that purpose.

483 Beacon Street.

REPORT OF A CASE OF STERILITY IN THE AGED CURED BY THE USE OF THE WYLIE DRAIN*

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History.—Mrs. J. S., aged 50, white, negative family history, had the usual diseases of childhood. With the exception of typhoid fever, eighteen years ago, she has never had a serious illness. The onset of menstruation occurred at 13. For the first six or nine months the flow was somewhat irregular and scant. After the first year it has been regular, about every twenty-eight days, although variations of three or even five days are not unusual. Bleeding usually lasted for four days, the last twenty-four hours being rather scant; the amount is about normal, the patient requiring seven or eight napkins daily for the first three days. Menstruation is of the same character now as it was ten years ago; there are no symptoms of the menopause. The patient usually has a slight feeling of weight and discomfort in the lower abdomen for the first day of the period; she has never had severe dysmenorrhea. Leukorrhea has never been profuse or pathologic. The patient usually has a slight, whitish discharge for a few days following the cessation of menstruation. The patient was first married when she was 22. When she was 31, her husband died of pneumonia; until a few months prior to his death, he was a strong healthy man. Five years later, or when the patient was 36, she married a second time. She has never been pregnant although she has always desired children, and has never adopted any means to prevent conception. Her chief complaint is of sterility. The patient has no subjective symptoms, and, in fact, first visited me to inquire concerning her sister on whom an operation for laceration of the cervix and perineum had been performed; at this time she lamented the fact that she was sterile. On inquiry it was learned that during the life of her first husband, a dilatation and curettage had been performed with the hope that this might result in widening the cervical canal so that pregnancy could take place. Dilatation without curettage was performed four years after her second marriage.

Examination.—The patient is a rather large, plethoric woman weighing 150 pounds. She is distinctly well preserved and gives the impression of being at least five years younger than she is. The bowels are regular; the heart and lungs are normal; the urine is negative. She occasionally has slight occipital headaches, not infrequently just before the menstrual periods; these, however, are never severe. Abdominal examination was negative. Pelvic examination showed that the outlet was nulliparous; the vagina was rather deep, and the anterior and posterior walls were in apposition. The cervix was normal in its transverse diameter, but was longer than usual and extended for at least one and one-half inches into the vagina. The external os was small although far from being of the pinpoint variety so frequently seen in young women. No evidence of infection was present in any part of the genital tract. The cervix pointed at right angles to the axis of the vagina. The uterus was normal in size, shape and consistency; it was in anteposition and movable. The ovary on the left side could be felt as an almond-shaped body, if anything rather larger than normal. It was movable and slipped easily between the fingers. The ovary on the right side was not palpated. No induration or other evidence of intraperitoneal inflammation was present.

Prognosis.—Taking into consideration, the fact that the patient had already had two dilatations performed for sterility, both at a period of life when conception was more likely to result than at her present age, a very guarded prognosis was given regarding the probability of pregnancy ever taking place. There was no history pointing toward sterility in the husband. After the couple had consulted for a few days they decided to have an operation performed.

Operation.—This was performed ten days before an expected menstrual period under ether anesthesia. The examination at

*Read before the Philadelphia Obstetrical Society, Feb. 2, 1911.

this time confirmed the previous negative pathologic findings of the former examination. The right ovary could now be easily felt and was normal. After the ordinary antiseptic precaution, the cervix was widely dilated and kept on stretch for ten minutes. The uterine cavity was then explored; no curettage was performed. A rather thick Wylie drain[1] was inserted and the vagina lightly packed with gauze to keep the drain in position.

Postoperative History.—The vaginal gauze was removed in twelve hours. The menstrual period which was due ten days after the operation was delayed for five days; the patient was kept in bed until this had passed. The Wylie drain was allowed to remain in place for four weeks, during which time the patient was kept under observation. The next menstrual period, which was expected a little less than a week after the removal of the Wylie drain, never appeared, and a month or six weeks later, a positive diagnosis of pregnancy was possible. Pregnancy and labor were normal, the child's position being L. O. A. Labor lasted about sixteen hours, pains being severe during the last five hours. The perineum was torn in the median line for a depth of about 0.5 to 0.75 inch; this was repaired. The child weighed eight pounds. The puerperium was normal. Mother and child have done well.

The interesting points of this case seem to be the advanced age of the patient. It should, however, be borne in mind that she was a strong, healthy, well-preserved woman and that no symptoms of the menopause had appeared. Regular menstruation is not unusual until forty-eight or fifty as I have shown in a previous paper[2] in an analysis of 200 normal cases. In this study it was found that the average age at which the menopause appeared in this country was between 48 and 49, and that 21 per cent. of women menstruate until 50. Since the joint report of Dr. Barnard and myself[3] before the Philadelphia Obstetrical Society early in 1910, of a series of fourteen previously sterile women, in which five, or 35.71 per cent., became pregnant within one year following operation, I have had two additional cases, both occurring in women who had been married for two years and both of whom were desirous of children. In one, the patient became pregnant two months after the insertion of the Wylie drain. The second case was unsuccessful. A number of additional successful cases have occurred in the gynecologic department of the University Hospital. I would like again to emphasize the fact that the Wylie drain should never be inserted except under strict aseptic precautions, the same antiseptic and aseptic preparations being adopted for its use as for a vaginal hysterectomy or other major operations. Neither should the drain be used unless inflammatory lesions of the genital tract can be absolutely excluded. Patients in whom this form of treatment is adopted should remain in bed for ten days following the operation, and should be kept under close observation during the entire period that the drain is in place. No bad results have ever followed the use of the Wylie drain in my hands. In cases of sterility it is best to operate about ten days or two weeks before an expected menstrual period. In at least two cases which have come under my observation, conception has taken place while the drain has been *in situ*.

Just why pregnancy, after the age of 44 or 45 should be so rare as it is, is a little difficult to explain on purely anatomic grounds. Conception in the normal individual is always possible so long as ovulation persists. We have no means at our command of ascertaining exactly when ovulation ceases in any given case; however, we know that in the majority of cases ovulation and menstruation are synchronous.[4] And on this basis it would seem fair to assume that pregnancy would not be unusual so long as the latter function was in evidence. Despite this, it is a clinical fact that pregnancy, after 45 is rare and after 50 is exceedingly uncommon. Numerous cases, however, have been reported; indeed, instances have been recorded in which pregnancy has occurred some time after the entire cessation of menstruation. Buckle[5] reports a case occurring in a multipara of 50 years of age after cessation of menstruation for eleven years. Before subjecting a woman to any form of operative treatment for sterility, the husband should invariably be examined for aspermatism.

1503 Locust Street.

1. The Wylie drain is a form of stem pessary, made from hard rubber, and is about 5.5 cm. in length. Along the edge of the stem is a groove. The base of the pessary is about 1.5 cm. in diameter. The diameters of the stems vary from 4 to 8 mm.
2. The Menopause, Am. Jour. Obst., 1910, lvi, No. 2.
3. Dysmenorrhea in Nulliparous Women Without Gross Local Lesion, Am. Jour. Obst., 1910, lxi, No. 5.
4. Leopold and Mironoff: Arch. f. Gynäk., 1894, xlv, 506.
5. Childbirth After Apparent Menopause, THE JOURNAL A. M. A., Aug. 13, 1910, p. 568.

SYPHILITIC HYPERTROPHY OF THE INFERIOR TURBINATES WITH REPORT OF A CASE*

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"It is difficult to mistake secondary syphilis of the nose for any other disease when a careful history is taken and a thorough examination is made." That is a "bromid" from one of our recent American text-books. It is unscientific, unpractical and, withal, untrue, for the anamnesis of the syphilitic is notoriously a history of guile, and the thorough clinical (which is evidently to be understood in the above passage) examination is often the ideal rather than the reality, for reasons with which the practical man is quite conversant.

Moreover, if it were difficult to mistake secondary syphilis of the nose for any other disease, it obviously follows that it would likewise be difficult to mistake any other disease of the nose for secondary syphilis, and the fallacy of such an attitude must at once be apparent. Even a negative bacteriologic examination would not be conclusively diagnostic, as everyone is aware, and while a positive finding of the spirochete would be more or less binding, yet, even here, the diagnosis is not infallible.

As a matter of fact, syphilitic lesions of the nasal mucosa are comparatively rare, which may or may not account for the scant attention the subject receives in most of the text-books. Yet, it is a matter of very great importance to the victim. In a practice of thirteen years I do not think I have seen (perhaps I should say recognized) more than half a dozen cases of undoubted secondary luetic rhinitis.

I believe we may safely say that there is no really typical appearance of intranasal secondary syphilis. Hence, a diagnosis, *ab inspectione*, we might aptly characterize as a diagnosis *sine circumspectione*. Even syphilitic ulceration of the septum, with perforation, does not carry with it any certainty of clinical diagnosis, for ulceration and perforation of the septum depending on some utterly different etiology may yet present an appearance which, on mere inspection, is wholly impossible of differentiation. In other words, while the sec-

* Read in the Southern Section of the American Laryngological, Rhinological and Otological Society at Lynchburg, Va., Jan. 22, 1911.

ondary ulcer on the mucous membrane of the pharynx and fauces is usually quite characteristic (the familiar mucous patch), my limited experience teaches me that the ulcer occurring most often on the nasal mucosa is far less typical, being of the superficial variety. The fact may be, and probably is, due to the physically and physiologically more resistant tissues in the nares, together with possibly a thinner mucosa proper.

It is my belief, then—and at least I shall confess it to be true so far as my own present powers of diagnosis are concerned—that, excepting the primary chancre, the only cases of nasal syphilis that are usually promptly recognized on clinical examination are those that are first seen in the tertiary stages, when gummatous and necrotic processes are in extensive evidence.

Hypertrophy of the turbinates is a secondary manifestation of lues. The condition locally presents neither more nor less of the symptomatology of hypertrophy due to other causes, such as acute coryza, hypertrophic rhinitis, vasomotor rhinitis, hay fever, etc. It is said that the middle turbinates are most often involved in syphilitic hypertrophy. In the few cases I have seen this has not been my experience. My limited observation shows the more frequent involvement of the inferior turbinates. I have no doubt that ulceration, however, seems to be oftenest of the superficial variety and not to be easily differentiated from superficial ulceration of a non-specific type.

Ulceration, we must all agree, is commonly seen along with intranasal hypertrophic changes, and may readily occur as the result of pressure, or of nutritional errors, or from the atmospheric erosion due to narrowing of the passages. Indeed, while I freely admit I may be mistaken, I am not at all sure that the so-called superficial ulcer of intranasal secondary syphilis ever occurs in the absence of marked hypertrophy; hence, it would seem to be a question whether there really exists such a specific lesion, or whether the ulcer is not really due in all cases to mechanical or nutritional disturbances.

These, then, constitute my reasons for believing that the diagnosis of secondary intranasal syphilis is far from being a simple matter of inspection and subjective history. After all is said and done, the good old-fashioned therapeutic test may fairly be considered our safest guide in these cases. These lesions will not respond to any kind of topical treatment whatever, and they surely will respond to the administration of mercury. The prognosis appears to be uniformly good under appropriate treatment.

REPORT OF CASE

G. B., a man, aged 34, employed in an office, presented himself with symptoms indicating a severe chronic coryza, or vasomotor rhinitis. He had no pain, in fact, no other symptoms but the intolerable stuffiness of the completely blocked nasal passages and the annoyance of the copious mucous discharges. Inspection revealed only enormously hypertrophied inferior turbinates, yielding but slightly to cocain and epinephrin, and substantial adhesions between inferior turbinate and septum on the left side, while on the right side appeared four or five shallow ulcerated spots the size of a buckshot and covered with glairy mucus on the anterior aspect of the turbinate and on the septum. This condition had been present, he stated, for about three months. Previous to consulting me he had been treated by another rhinologist, who, besides using the usual astringents, had applied the galvanocautery to the ulcers, and had prescribed some systemic tonic mixture. No benefit had resulted after several weeks of this treatment. (This fact should have put me especially on my guard against syphilis.)

In a more or less casual way I considered the possibility of syphilis, looked the patient over for other evidences in the cursory manner of routine, and asked directly concerning a history of syphilis. The results were negative. The patient appeared above suspicion, and I proceeded on other theories. After a few days of unavailing treatment with local measures, I performed an inferior turbinectomy on the left side. The other structures, then becoming visible, appeared normal. Within a week or so a well-marked proliferating process commenced about the middle of the turbinate stump. On its continued growth I snared this off a few days later.

The patient then complained of his mouth and teeth feeling uncomfortable, though not painful. Examining the roof of the mouth, I found the arch of the hard palate about one-fourth filled with a smooth, hard, rounded oval mass, not at all sensitive, and presenting three or four superficial ulcers of apparently precisely the same character as those which appeared in the nose, and which had never shown the slightest improvement under local treatment up to this time. Still, I remained "asleep at the switch," and for a few days tried to reason out the pros and cons of a probable neoplasm, and was about to make a section for microscopic examination, when I awoke with a sudden and sickening thud. The rest of the story is briefly told. Mercury protoiodid and potassium iodid solved the problem that had baffled me for several weeks. The ulcers healed as if by magic; the thickened tissues resumed their normal condition; the distress of mind and body which had afflicted the patient disappeared, and he grew stout, well and happy. I had been dealing all the time with late secondary manifestations of syphilis, but I feel that I had at least some slight shadow of excuse for my tardy diagnosis.

Alas, that we cannot all comply with the gentle and epigrammatic admonition of the eminent Dr. Osler:

"Know syphilis in all its manifestations, and what remains to be learned will not stretch the pia mater of a megalocephalic senior student."

INOCULATIONS OF NASAL SECRETION FROM PATIENTS WITH ACUTE POLIOMYELITIS *

I. STRAUSS, A.M., M.D.
NEW YORK

The assumption that acute poliomyelitis is a contagious disease is founded partly on experimental research. Flexner and Lewis were the first to call attention to the presence of the virus in the nasopharyngeal mucosa of monkeys ill with the disease, and that monkeys could be infected when the virus was applied to the scarified nasal mucosa. Leiner and von Wiesner found that successful inoculation resulted when the virus was smeared on the intact nasal mucous membrane. Recently Osgood and Lucas have reported the important fact that the virus can be present in the nasal mucosa of monkeys as late as five and one-half months after the acute stage of the illness. Landsteiner and Levaditi, in their last report, criticized the hypothesis of nasal contagion advanced by Flexner and Lewis, in that they had overlooked the determination of the presence of the virus in the nasopharyngeal mucus. They inoculated a macacus with the nasal secretion obtained from a monkey ill with poliomyelitis, but with negative result. They were also unsuccessful in inoculating a monkey with secretion which they had obtained from two men, one of whom had been ill some weeks, the other some months previously.

It occurred to me also that the virus ought to be present in the nasal mucus and, therefore, in August of last

* From the Department of Pathology, Cornell Medical College.

year I made inoculations which, though unsuccessful, have a certain value in solving this question of contagion. The material consisted of ten cases; seven occurred during the epidemic at Springfield, Mass.,[1] one in the small epidemic at Lake Placid in the Adirondacks, one in Manhattan, and the tenth in Brooklyn. The mucus was obtained by passing dry cotton swabs into the nasopharynx through the mouth. When removed they always had considerable mucus attached to them and in two instances they were a little blood-streaked, thus showing that they had come into intimate contact with the mucosa. After inoculation the swabs were placed into 10 c.c. of either normal saline solution or bouillon and kept either at room temperature in the dark or on ice. The solution was expressed from the swabs in order to remove as much of the virus as possible, and filtered through either Berkefeld or Chamberland filters. The virus is known to pass either of these filters. The filtrate was then centrifuged and either 2 or 4 c.c. were injected intracerebrally into rhesus monkeys. Patient 9 were mixed with salt solution on the same day that the nasal swab was taken. The mixture was filtered through a Berkefeld filter and the filtrate centrifuged. Four c.c. of the sedimented portion were injected intracerebrally into a monkey. The animal died of marasmus after four weeks. The autopsy revealed no cause of death. An emulsion of his brain and cord was inoculated into a second monkey with negative result. This experiment, so far as we are aware, is the only one in which an attempt has been made to demonstrate the virus in the human feces.

TABLE OF INTRACEREBRAL INOCULATIONS OF RHESUS MONKEYS WITH NASOPHARYNGEAL SECRETIONS FROM PATIENTS WITH POLIOMYELITIS

Case.	Age, Years.	Onset of Disease.	Swab Taken.	Temp. When Swab Taken.	Clinical History.	Intracerebral Inoculation in Monkeys.
1	25.....	8/6	8/13	.....	Onset with T. 101 F. Severe headache, rigidity of neck. Aug. 7, facial palsy (nuclear) and palsy of right ext. rectus.	Swab 3 days in bouillon. Chamberland filter; 2 c.c. inoculated.
2	1¼....	8/7	8/11	During febrile stage.	Began with fever, vomiting and diarrhea. Aug. 10, T. 102 F.; unable to move arms or legs; stuporous; Aug. 11 had fever, but was brighter. Paralysis continued.	Swab kept 19 hours in bouillon. Berkefeld filter; 2 c.c. inoculated.
3	1¾....	8/8	8/13	3 days after fever.	T. 100.8 F. at onset. Aug. 9, T. 102 F. Aug. 10, facial paralysis. Aug. 11, normal temperature.	Swab kept 3 days in bouillon. Chamberland filter; 2 c.c. inoculated.
4	5.....	8/8	8/13	2 days after fever.	Began with T. 102 F., rigidity of neck, paralysis of both arms. Aug. 10, T. 101.6 F. Aug. 13, T. normal; left leg paralyzed.	Swab 3 days in bouillon. Chamberland filter; 2 c.c. inoculated.
5	18.....	8/8	8/13	102 F.	At first headache, retraction of head, rigidity of neck, painful joints, delirium, T. 102 F. Left leg paretic. Angina.	Swab 3 days in bouillon. Chamberland filter; 2 c.c. inoculated.
6	5.....	8/11	8/13	No fever on day of paralysis.	Malaise for one week; fever Aug. 11. Paralysis of right leg Aug. 13.	Swab kept 3 days in bouillon. Chamberland filter; 2 c.c. inoculated.
7	62.....	8/31	9/4	After death.	Began Aug. 31. T. 101 F. Paralysis of both arms and legs developed Sept. 1. Died Sept. 4, of respiratory paralysis.	Swab kept in bouillon in ice-box for 5 days. Berkefeld filter; 5 c.c. inoculated.
8	1.....	8/16	8/17	24 hours after fever.	Paralysis of deltoid.	Swab kept in bouillon 5 hours. Berkefeld filter; 2 c.c. inoculated.
9	15.....	9/12	9/19	102.6 F.	Began with headache, pains in legs, fever. Sept. 13, legs paralyzed. Sept. 14, arms paralyzed; rigidity of neck; high fever. Sept. 19, T. 102.6 F.	Swab kept in bouillon 2 hours. Berkefeld filter; 4 c.c. inoculated.
10	2.....	9/18	9/28	24 hours after fever.	Onset with fever, vomiting; arm and leg paralyzed three days later. Then swallowing was difficult. Sept. 27, T. 102.4 F.	Swab kept in salt solution 4 hours. Berkefeld filter; 4 c.c. inoculated.

The virus did not have to be present in large quantities, since Leiner and van Wiesner had shown that a cord emulsion of 1 to 1,000 or 1 to 500 strength is more potent than stronger emulsions.

The accompanying table gives the data of the inoculations. No monkey became ill as a result of these inoculations. The experiments, therefore, seem to indicate the absence of the virus in the nasal mucus. This, of course, does not mean that it may not sometime be found in the human nasal mucosa as an excretion, just as is the case in the monkey, but if we are to regard the nasopharynx as the source of the contagion we ought to be able to demonstrate the presence of the virus in the nasal mucus.

One experiment was made to isolate the virus from the feces of a patient with an acute case. The feces of

1. I wish to express my thanks to State Inspector Boyd and Drs. Emerson, Tracy, Hirsch and Rearden of Springfield for their kind assistance.

THE ETIOLOGY OF VERRUCA

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SAN FRANCISCO

It may be assumed as true that a simple traumatism can give rise to a wart, but in order to do so the injured tissues must themselves be in a favorable condition to react in this peculiar way to the traumatism. The injury, therefore, would be the provocative cause of the verruca, and the condition of the tissues the predisposing cause. Verruca or papilloma is primarily an epithelial growth, and only secondarily is the subjacent connective tissue affected. Moist heat, inducing maceration of the epithelial cells, is one of the most important of predisposing causes of the neoplasm, and acts probably by exciting epithelial cells to grow more luxuriantly, and particularly so when a traumatism draws an increased supply of blood to the part. The frequency of papilloma of the sole in the flat-footed is an example of this.

My attention was first drawn to this by Dr. W. A. Hardaway of St. Louis. These patients almost always suffer from hyperidrosis of the feet, and the consequent maceration of the epithelium of the sole constitutes the predisposing tendency to the formation of papilloma in this region. Nature seldom afflicts us with one thing at

a time; she diversifies our torments. The arch of the foot breaks down, we get hyperidrosis, and then that most painful affliction, papilloma of the sole, appears. In this way we finally become intimately acquainted with grief.

But maceration of the epithelial cells, predisposing them to this peculiar form of neoplasm may, I am convinced, be caused by hot water alone, of which the following is an instance:

About July 4, 1905, a man came to me with a painful swelling under the ball of the right foot, which was quickly seen to be a verruca. There was the usual circumscribed callus with the bunch of dots in the center representing the upgrowing connective tissue filaments. A strong salicylic acid ointment was ordered to be applied to the sole each morning, so that in walking he would tramp it well in during the day. When the wart was laid bare of its surrounding mass of epithelial cells, it was burnt with silver nitrate, but others came, and in great numbers.

In casting about for the reason of this persistence of the affection, I told the patient of Dr. Hardaway's observation in regard to the association of flat-foot and papilloma of the sole, and explained that probably flat-foot was only an incident in the etiology, and that the essential feature in all likelihood was the hyperidrosis. He shortly afterward related to me a most interesting story. In the hotel where he boarded there was an abundance of hot water, and every night he used to soak his feet in this for no other reason than that the heat gave him pleasure. One evening on returning to his rooms he found he had mislaid his key, and the servant with the passkey was not in sight. The patient, being athletic, entered through the transom and jumped to the floor. He lit on the ball of his right foot, and remembered that it stung quite severely. Shortly afterward his trouble appeared and on the site of this very traumatism.

A few days after this explanation, the great fire occurred, and threw the patient and his physician both out on the street. He had some fire insurance in one of the companies that tried to evade or shave all its policies; the city had no street-car service or other means of public conveyance, and all the work of getting proof of loss properly presented had to be done on foot. In addition to this he had to hunt for me. In this interesting interval the papilloma of the sole did not neglect to torment him. After he had found me I had my troubles, for I wished to curette the wart, and as all the surgical instrument stocks had been destroyed in the catastrophe, it was difficult to find a suitable tool. Finally by thorough curetting under cocain and cauterization with nitrate of silver, the papillomas were eradicated with no subsequent return.

The hot-water bathing, I have no doubt, had much to do with the occurrence of warts in this case.

An active proliferation of the epithelial cells favors the occurrence of verrucæ, and this is probably why they so frequently occur in youth, when all the cells of the body are in very active growth. In seborrhea also the epithelial cells, both of the skin and of the mucous membranes, proliferate with unusual activity, and both verrucæ and paillomas are apt to appear. Verrucæ of the scalp, for example, are frequently associated with seborrhea of the scalp.

In seborrhea, moreover, there is not alone a more active proliferation of cells from the very fact of the existence of seborrhea, but those having seborrhea sweat more easily and profusely, so that they have a double predisposition toward papilloma or verruca.

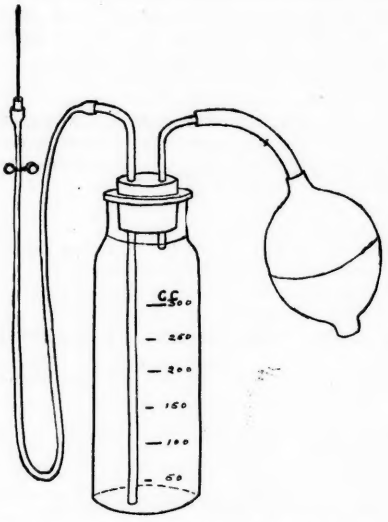
A traumatism alone, however, I am convinced may give rise to these troublesome growths, and it is not strange that it should be so, for if injury causes a continuously increased supply of nourishment to a part it may cause increased cell proliferation through overnourishment, and hence may predispose to papilloma.

323 Geary Street.

A SIMPLE APPARATUS FOR THE INTRAVENOUS INJECTION OF SALVARSAN OR OTHER DRUGS

WILLIAM F. BERNART, M.D.
CHICAGO

The nearly universal recommendation of the intravenous use of salvarsan has brought up the question of which is the most convenient and best contrivance for the administration of this drug. A large glass syringe is probably the simplest appliance for giving the injection; however, it is not always possible to get a syringe which will hold 300 c.c. If it is administered by gravity, it is essential for the operator to have an assistant. The apparatus which I am going to describe can be constructed at a small cost, answers the purpose in every



Apparatus for intravenous injections by means of a pressure-bottle.

respect and can easily be operated by the physician alone. The materials required are:

Wide-mouth bottle, capacity 360 c.c. (12 oz.).
Rubber stopper to fit the bottle, two perforations in stopper.
Two glass tubes to fit perforations, one sufficiently long to reach to the bottom of the bottle, the other to reach through the stopper.
A double-valved atomizer bulb.
Twelve to eighteen inches of India rubber tubing to fit glass tubing.
Hypodermic needle, platinum.
Clamp for tubing.
Glass funnel and filter-paper.
Glass-stoppered bottle (360 c.c.) and 50 to 100 glass beads.

The salvarsan is dissolved and mixed in the glass-stoppered bottle according to directions accompanying each package of the drug. After the solution is properly prepared it is filtered into the reservoir of the apparatus. While waiting for the solution to filter, the reservoir is placed in a bowl of hot water so that by the time the filtration is completed the solution is of a proper temperature for immediate use. If desired, the salvarsan can be prepared in the reservoir of the apparatus and if a fine piece of muslin is tied over the lower end of the long tube, the solution can be filtered simultaneously with the injection. After the reservoir is filled, the rubber stopper, with the glass tubes inserted, is tied tightly into place. The needle and hose are elevated, the

bulb is pressed and all air is expelled. As soon as the liquid spurts through the needle in a solid stream the hose is clamped and the needle is inserted into the vein of the patient. When it is certain that the needle is in the proper position the clamp is loosened and by pressure on the bulb the fluid is readily forced into the circulation.

According to the air-pressure used, the 300 c.c. of solution can be injected in from four minutes to as long a time as may be deemed advisable. When the solution is all utilized the air slowly follows the fluid up the long glass tube, giving the operator plenty of time to close the clamp before any air can enter the veins. The needle is then withdrawn and the puncture wound sterilized and closed with the tincture of iodin.

The compactness of this apparatus permits of but little loss of heat by radiation and the giving of an injection is under the full control of one individual.

42 Madison Street.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

PRE-DIGESTED LIQUID FOOD, Mulford.—Pre-digested Liquid Food, Mulford, contains 10 per cent. of protein and 10.5 per cent. of carbohydrates (dextrose, lactose and sucrose) in a vehicle containing glycerin about 1½ per cent., saccharin about .01 per cent. (1/20 grain in a fluidounce) and about 30 per cent. of native wines, fortified with alcohol sufficient to bring the alcohol content up to 16 per cent. absolute alcohol per volume.

Pre-Digested Liquid Food, Mulford, is prepared by digesting fresh lean beef with hydrochloric acid and pepsin and digesting milk casein first with hydrochloric acid and pepsin and after neutralization with pancreatin. The solutions after digestion are concentrated in vacuo and mixed with the other ingredients.

It is a light yellowish-red liquid, having an aromatic odor and not unpleasant taste. Its specific gravity is about 1.07. When evaporated to constant weight it leaves about 25 per cent. of residue.

Actions and Uses.—See Medicinal Foods.

The nutritive value of 500 Gm. corresponds to 416.3 calories, of which 201 are due to protein and 215.3 to carbohydrates. The same quantity of milk represents 360 calories, of which 84 are due to protein, 98.4 to carbohydrates and the rest to fats.

Manufactured by H. K. Mulford Co., Philadelphia. (Not patented or trademarked.)

ANTIRABIC VACCINE

The American Biologic Company, Kansas City, Mo.

Pasteur Antirabic Vaccine.—The virus is prepared according to the method of the Hygienic Laboratory, Washington, D. C. An amount of the dried cord, sufficient for one dose, is suspended in a mixture of 66⅔ per cent. glycerin and 33⅓ per cent. of physiologic salt solution, and sent daily by mail, accompanied by a syringe containing sterile physiologic salt solution for further dilution at the time of administration. The treatment requires 18 to 21 days.

ARTICLES ACCEPTED FOR N. N. R. APPENDIX

Borcherdt Malt Extract Co., Chicago.

Borcherdt's Malt Extract Plain.—A preparation essentially equivalent to Extractum Malti U. S. P. and containing 10 per cent. of glycerin. U. S. Trademark Nos. 64,467, 64,481.

Borcherdt's Malt Olive with Hypophosphites.—Each 100 c.c. is said to contain Borcherdt's Malt Extract 70 c.c., California olive oil 20 c.c., C. P. glycerin 10 c.c., calcium hypophosphite 0.64 gm. (3 grains in a fluidounce), sodium hypophosphite 0.64 gm. (3 grains in a fluidounce). U. S. Trademark Nos. 60,422, 64,467.

Borcherdt's Malt Soup Extract.—Borcherdt's Malt Soup Extract is a mixture obtained by adding potassium carbonate 1.1 gm. to each 100 gm. of Borcherdt's Malt Extract, diluted with one-half its volume of distilled water, and evaporating in vacuo to a specific gravity of 141. U. S. Trademark No. 64,467.

Therapeutics

PREVENTION OF PULMONARY TUBERCULOSIS

POINTS WHICH MUST NOT BE FORGOTTEN

The announcement by Dr. Robert Koch, in 1882, of his discovery of the tubercle bacillus and its relation to tuberculosis opened a new era in the study and management of that disease. He proved conclusively that the tubercle bacillus is the cause of tuberculosis, and opened the way to the modern treatment of the disease. Tuberculosis does not occur in the absence of the tubercle bacillus, and the recognition of this fact has greatly simplified the problem with which the medical profession had been struggling almost hopelessly for centuries.

It is now generally recognized that the most common method of transmission of this terrible disease from one individual to another is by the transference of the tubercle bacillus from the sick person to his neighbor by means of the secretions or exudations from the lungs, and from the upper respiratory organs where the tubercle bacillus may be lodged on the mucous membranes and in the mucus and other secretions of those membranes. This makes manifest the great importance of a suitable disposal of the matter expelled from the nose and mouth. It has been found that not only do the masses of sputum of considerable size which are expelled from the lungs contain tubercle bacilli, but also that the smaller particles of moisture and mucus which are expelled in such small quantities as to be almost unrecognizable, in many instances also contain the dreaded bacillus. These small particles, or droplets as they are commonly called, are expelled usually with the so-called "dry cough" which is not accompanied by the expulsion of the larger masses of sputum. The problem, then, is to receive and take care of the matter expelled from the mouth and nose of the tuberculous patient, whether this comes from the lungs, throat, nose or mouth.

Various devices have been provided for collecting and destroying the larger masses of sputum. In the room where the sick person spends most of his time, a metallic cuspidor with an easily opened cover is very useful. This cuspidor should contain water, preferably rendered antiseptic by the additon of a 5 per cent. solution of phenol (carbolic acid). This cuspidor should be large enough for the patient to deposit the sputum in it easily. Other forms of receptacle include a tin cup in which is placed a pasteboard box into which the patient expectorates. For patients who are walking about, a small cup with a removable cover is convenient. This should be made so that even when it is tipped over the sputum will not escape. When it is impracticable to use any of these special receptacles, the sputum may be received on pieces of cloth or on paper napkins. It is necessary that the patient should be provided with a receptacle for these things which is impervious to moisture and which will

not allow the sputum to penetrate to the exterior of it, and which may be thoroughly cleansed and disinfected when the pieces of cloth or paper are removed from it. The use of gauze is recommended by many writers, but is less desirable than paper or pieces of cloth, because of the danger that the sputum will penetrate the meshes and extend the infection. Whatever the substance used, it may be deposited in a convenient stiff paper bag, and the bag, later, with its contents, burned. The water and sputum in the cuspidors, after disinfection, should be thrown into the water closet.

All papers and cloths on which sputum has been deposited should be burned. In many homes, under the modern conditions of heating and cooking with gas stoves, difficulty may sometimes be found in accomplishing this, but the importance of destroying paper or cloth contaminated with tubercle bacilli is so great that the difficulty should not be regarded as an adequate excuse for failure to effect perfect destruction by incineration.

Even outside of the house or on the street, the same care should be exercised in collecting and destroying the sputum. Boards of health and municipalities have exercised themselves to prevent the spread of the disease in this way to the extent of passing ordinances forbidding spitting on the sidewalk. Such ordinances are not enforced so thoroughly as they should be, but for the tuberculous patient spitting in the gutter is objectionable, and should not be encouraged. In fact, if all spitting, except into some suitable receptacle or some substance which could be destroyed, were forbidden, the condition of the world, and especially of the larger cities, would be greatly improved. Certainly, everyone should be taught, even from childhood, that spitting is inelegant, and that no one should cough, either in public or private, without holding before his mouth some paper or cloth so as to receive on it any matter which may be expelled, even involuntarily, from the mouth or nose.

In the same way, the discharges from the nose of the tuberculous patient should be received on paper or cloth which can be destroyed. If occasionally the ordinary handkerchief is used to receive the discharges from the mouth or nose, this should be placed in water before the discharge is allowed to dry, and should be boiled before being placed with the other soiled clothing for the usual family laundry.

It is impossible to emphasize too strongly the necessity of the most minute care to prevent the dissemination of the discharges from the lungs, nose, throat and mouth of the tuberculous patient. When, either from accident or carelessness, these discharges are not properly cared for, but are allowed to fall on the floor or street, as they become dry, the tubercle bacilli are, so to speak, set free in the dust, and are liable to become a source of danger to healthy people. This suggests the importance of using every possible measure to prevent the dissemination of dust in apartments or on streets where many people are accustomed to go. The feather duster, so dear to the average housewife for removing dust from furniture and bricabrac, should never be allowed inside the residence of a civilized citizen. Ordinary sweeping with a broom should not be allowed unless special precaution has been taken to prevent the raising of dust. It has been recommended for this purpose that a newspaper be dampened, torn into pieces, and thrown upon the carpet before the broom is used. Where there is no carpet on the floor, moist sawdust is useful to prevent the raising of dust. Far better than the broom for the removal of dust and dirt from rooms is the vacuum cleaner. It is greatly to be hoped that it will not be long before the broom will be a forgotten implement of cleansing and superseded entirely by the vacuum cleaner.

In the streets of cities the dust which is raised by the wind or by vehicles is frequently germ laden, not only with the bacilli of tuberculosis, but with other disease germs, especially those of influenza and pneumonia. Hence the importance of street cleaning and of street watering, the former diminishing the amount of dust liable to be raised by the wind or vehicles, and the latter preventing whatever there may be from being blown about.

These are the most important considerations to be borne in mind in preventing the transmission of the disease from the patient to those who come into the neighborhood or the region where he is or has been. There is another point of view to be taken into consideration, and that is increasing the resistance of feeble people against the attack of the tubercle bacillus. It would be impossible, perhaps, to prove that no child has ever been born infected with tuberculosis from its parents before birth. In fact, it is generally conceded by authorities on the subject that such antenatal infection is possible, but practically it certainly is very rare. That tuberculosis is hereditary in the sense in which that statement would have been understood previous to thirty years ago is recognized now as being impossible. On the other hand, that many children born of parents, one or the other of whom has suffered from or has died of tuberculosis, are more likely than the children of healthy parents to suffer from tuberculosis is recognized by everyone. But the interpretation of this observation which now prevails is that the child does not inherit the disease, tuberculosis, but that he inherits a predisposition to that disease, that he inherits a weakness of physique which renders him more liable to be attacked by the disease than others who do not inherit such weakness. One of the most important problems to-day in regard to the prevention of pulmonary tuberculosis is to raise the vitality and resisting power of these individuals so that they will not easily become affected by the tubercle bacillus. For at present it is recognized that this bacillus is so generally disseminated throughout the places occupied by the human family, that many people become the hosts of the bacillus without knowing it, and if their resistance is sufficiently strong, do not suffer any ill effects from it, but cast it off.

It is now well understood that the diet of patients with a tuberculous tendency must be nutritious, but it is frequently necessary to express a caution against the use of alcoholic drinks. Many people believe that these beverages are a valuable tonic, increasing the appetite and improving the digestion and general nutrition, and therefore believe that they are useful for people who seem to have a predisposition to tuberculosis. As a general rule, it may be stated that this belief is a mistaken one, and that in the absence of any special indication for their use most individuals, even if they are not robust, are better off without the habitual use of alcoholic stimulants.

In order to raise the resisting power of children with tuberculous parents, so that they may not readily contract the disease, many things must be taken into account. Perhaps the most important of all is the question of pure, fresh air. This at once brings up the question of residence. Families, any member of which is recognized as being weak or having under-average resisting power, should consider carefully the selection

of a place of residence. They should not select a tenement house in a crowded city, but should, if possible, secure a residence in the country suitable for a single family and surrounded by air on all sides, and in which every room has a direct supply of fresh air and sunshine. The house should be built preferably on elevated ground, and on gravel or sandy soil. Low ground or clay ground should be avoided. Of course the residence should be selected not only with reference to fresh, pure air, but with reference to the facility of reaching the work in which the members of the family are occupied. This entails transportation facilities, which are of great importance. But not all people can live in the country where they can occupy separate houses. If a family embracing feeble members is obliged to live in the city, a residence should be found in the less thickly populated part of the town. These people should avoid tenements which have dark rooms, rooms in which there are no windows toward the outside of the house through which fresh air and sunshine may be admitted. In recognition of this fact, when cities are laid out the streets should be made broad, and the height of the houses should be limited in order that through narrowness of the streets and height of the adjacent buildings the air and sunshine may not be practically prohibited from the dwellers.

The manner of living within the house is also important. Rooms which have not windows opening directly out-of-doors should not be used for bedrooms. It is preferable that no bedroom should be occupied by more than two persons, and it is very desirable that each individual should have a separate bed. The windows should be kept open at night so that the occupants may constantly have fresh air to breathe. Infants require fresh air quite as much as adults, but they are less able to stand inclement weather or cold air than older children, and they should be gradually accustomed to the breathing of, and exposure to, cold air. It is of course necessary, in the matter of fresh air and cold air, to use common sense, as in all other matters pertaining to the health of individuals. The window through which fresh air is admitted should not necessarily be opened equally widely at all times; or if it is, varying degrees of protection against the incoming air may need to be employed at different times. For instance, if a strong, cold wind is blowing in the window at the hour of retiring, the window should either be partly closed, or a screen or curtain or blind should be placed in front of it to break the draught; otherwise, the sleeper will be very apt to awaken in the morning with a coryza.

Delicate children should not be sent to school too young, or confined in the schoolroom for many consecutive hours. They should be encouraged to remain out-of-doors, and to engage in active, but not too violent play. They should have longer hours of sleep than strong, robust children. For children from five to ten years of age, ten hours of sleep are none too many.

Breathing exercises should early be taught to all children, and especially to weak children, so as to increase the breathing power and promote the development and expansion of the chest.

Another consideration of great importance is the matter of food. Weak children should be fed regularly. Their food should be varied, nutritious, and easily digestible. Milk should be an important article of diet for every feeble child. Eggs are also useful, but should not be offered so frequently that the child will acquire a distaste for them. While sugar is a necessary ingredient of the diet of every growing person, yet it should not be provided for children in excess, especially in the form of pie, cake and candy. Children should be taught to eat fruit and vegetables, and a limited amount of meat. It is exceedingly important that they should be brought up and taught to eat fatty substances, such as butter, cream, and the fat of meat. This will do much to promote their nutrition and to increase their resisting power against disease.

With reference to providing abundance of fresh air for growing children as an aid in the prophylaxis of pulmonary tuberculosis, it is always necessary to examine the upper respiratory passages of the child in order to determine whether there is ready access of air to the lungs. Often it will be found that a deviated nasal septum, hypertrophied turbinates, nasal polypi, or adenoids in the vault of the pharynx interfere seriously with nasal respiration. Also, hypertrophied tonsils interfere with the taking in of an adequate supply of air. These conditions should all be looked for, and, when found, should be remedied by appropriate medicinal or operative treatment.

With reference further to the obtaining of an adequate supply of fresh air, the dress of the patient, especially if a girl or woman, should be carefully considered. High collars, or very tight collars about the neck interfere decidedly with respiration, and should be forbidden. The wearing of corsets too tightly laced about the waist interferes with abdominal respiration, and frequently produces displacement of the abdominal viscera and deformity of the bones of the thorax.

While the clothing should be sufficiently warm to protect the skin from changes in temperature and from draughts, it should at the same time be loose enough to form no obstacle to free respiration.

INTESTINAL WORMS—A CORRECTION

In THE JOURNAL, March 18, 1911, page 813, under the discussion of *Ascaris lumbricoides*, the statement was made that this worm lives in the intestines of cattle and pigs, and may reach man by their excrement contaminating water and vegetables. The statement was incorrect. The ascaris of the pig is different from that infecting man, and cattle do not seem to have this disease; hence the contamination of water and vegetables with the eggs of the *Ascaris lumbricoides* that infects man comes from infected human excrement used as a fertilizer, or by the direct contamination of water.

Massage of the Prostate.—Before one undertakes to massage the prostate, he must bear in mind the object sought, *viz.*, to improve the circulation and thereby aid absorption of the infiltrate, and secondly, to express any macroscopic pus (abscess). It is more important to bear the first indication in mind and execute the massage gently, than to do it too vigorously. The procedure should cause little or no pain to the patient, should be kept up for about five minutes, and should not be repeated oftener than twice a week, but the main reliance should not be put on massage alone. The periprostatic tissues should be gently massaged as well. The prostate can be made more accessible by making counterpressure over the symphysis pubis with the disengaged hand. The prostatic circulation can be more powerfully influenced by the prostatic vibrator, which is even less painful than the finger massage. When there exists a great deal of interstitial prostatitis, as evidenced by a nodular prostate, the massages do not influence the prostate, as we cannot hope for any absorption of organized connective tissue.—G. Greenberg, in *American Journal of Urology*.

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[*For other information see second page following reading matter*]

SATURDAY, APRIL 22, 1911

STANDARDIZATION OF DIGITALIS

One of the greatest handicaps to exact drug therapeutics is the fact that "impressions" either of the physician or of the patient play such an important part. Many other branches of medicine have been put on a truly scientific basis as a result of careful quantitative work, in either the laboratory or the clinic, or in both, but in drug therapeutics, such expressions as "the drug seemed to do good," are constantly used without the slightest attempt to measure any tangible effect, or to compare the case under treatment with one running a natural course. It is this habit of reliance on impressions which led physicians, fully as wise as any now living, to use for centuries drugs now entirely discarded; and it is this habit which keeps the modern pharmacopeias overburdened with equally useless drugs. It is rather surprising, however, to see what an important part "impressions" play even in the choice of a drug and the method of its preparation, for these would seem to be amenable to exact laboratory control. That such is the case however, is strikingly illustrated in a recent publication of Hale[1] on digitalis.

Hale has endeavored to trace the origin of a number of commonly accepted views concerning this invaluable drug and to test them experimentally in the laboratory. Some of his conclusions may be summarized as follows: The view that the leaves of the second year's growth are more potent than those of the first year—a view adopted by most pharmacopeias and by the Brussels conference—seems to be founded on tradition only. The only experimental work done had shown that the first-year leaves were fully as active as those of the second year; Hale, experimenting with four lots of first-year leaves, found them to be from 28 to 40 per cent. more active than the best second-year leaves obtainable. The view, or rather impression, that the leaves of wild-growing plants are more potent than those of cultivated plants—a view which finds expression in the French, German and some other pharmacopeias—is also shown not to rest on a scientific basis. Hale admits that some wild-growing leaves are more potent than some garden-grown leaves, but believes that cultivation *per se* has nothing to do with it, and points out that Allen's English leaves, which give high assay values, are garden-grown. He also discusses the influence of moisture and of heat on the keeping quality of leaves; he found that an amount of moisture sufficient to permit molding might cause a loss of potency of 90 per cent. in a few months, but found no justification for the statements sometimes made in the interests of special preparations that leaves dried in a vacuum, or preparations made by macerating leaves with cold water, have special advantages. Although these experiments should extend over a number of years before a final decision is reached, as far as they go they indicate plainly that physicians and pharmacists for decades have been groping in the dark after the causes of the well-known variation in the potency of digitalis leaves, and have often attributed it to irrelevant circumstances. The real cause is unknown, but seems to be connected with the nature of the soil, the character of the season, etc.; it is only by the use of physiologic standardization that uniformly active leaves can be obtained at present.

Of the galenical preparations of digitalis, Hale never found the fluidextracts to assay, relatively, as strong as the tinctures; this indicated incomplete extraction. The practice (one much encouraged by certain drug houses) of preparing pseudotinctures by diluting the fluidextracts is condemned; such "tinctures" have as a rule but from one-half to two-thirds the strength of genuine tinctures. It was found that whereas weak alcohol (35 per cent.) was as efficient as stronger alcohol in extracting the leaves, preparations made with the stronger alcohol had the advantages of containing less inert matter and of retaining their potency much better. A number of official extracts showed little deterioration (from 4 to 8 per cent.) in twenty-two months, whereas a number of proprietary preparations containing a smaller percentage of alcohol had deteriorated to a much greater degree (even to 33.3 per cent.) in the same period. Hale suggests that the makers of special preparations should submit them to much more rigorous tests than is done at present, and that physicians should use them as seldom as possible unless assured, by a system of dating, of their very recent preparation. The importance of this precaution was shown by the fact that one sample of a widely used proprietary preparation, secured from a reliable pharmacy, had lost practically all digitalis action and had become a cardiac depressant. Hale believes that the manufacture of special digitalis preparations should not be encouraged.

The second part of the bulletin deals with special digitalis preparations, such as tablet triturates, hypodermic tablets, fluid glycerates, etc. Tablet triturates obtained from different manufacturers were found to vary in strength by as much as 360 per cent., about the degree of variation found in official tinctures and fluidextracts. Hypodermic tablets of digitalin were also found to vary by as much as 230 per cent. The fluid glycerate was

1. Bull. 74, Hyg. Lab., P. H. and M.-H. S., Washington, D. C.

found to have but about 40 per cent. of the strength of the official fluidextract.

The bulletin closes with a discussion of two widely advertised proprietary preparations, digalen and digipuratum, embodying conclusions previously published.[2]

A perusal of this bulletin will place the practitioner in a much better position to form a judgment of the character of the digitalis preparation he uses. The work which it embodies should be of value in improving the pharmacopeial requirements of this important drug.

TWO SURGICAL PATRIARCHS

Detailed sketches of the lives of two men who were prominent in the surgery of the latter half of the nineteenth century in America have recently appeared; and teachers of medicine, as well as those who are interested in medical history, will find them storehouses of valuable material.

The recently published memoirs of Dr. Thomas Addis Emmet[3] are full of striking features illustrative of the medical professional life of the latter half of the nineteenth century in America, and reflecting the varied interests in life of a man who, though nearly 84 years of age, still retains the full vigor of his intellectual faculties. Dr. Emmet's is one of the comparatively few American names—and one of the earliest—that was well known in European medical circles practically half a century ago. Some of his work was that of a pioneer in the best sense of the word; it influenced the American medical profession widely, and yet was so thoroughly practical that it is still influencing us. It may be readily understood, therefore, how much such a volume from his pen means. Dr. Emmet's recollections are linked with many of the most important incidents in our medical history. For instance, he went through two awful epidemics of typhus fever with the Irish immigrants on Ward's Island in the early fifties. During the cholera epidemic of 1854, on two occasions, on making his visit to the immigrant hospital he found that all the patients and nurses in his ward had died of the disease since his previous visit. The relations of Emmet and Sims are also interesting; likewise the story of the origin of the Woman's Hospital and of the Cancer Hospital, now called the Memorial Hospital in New York.

One of Dr. Emmet's hobbies was the collection of documents relating to American history. He was one of the first in the field to gather autograph material, and he succeeded in making a collection unequaled of its kind. This is now in the Lenox Library, New York, bearing the name of the Kennedy-Emmet collection. Among autograph collectors, Dr. Emmet's name is known all over the world, while among American historians his work is considered most important for the saving of valuable material which would certainly have been lost but for his interest in it. It is probable that Dr. Emmet spent nearly a quarter of a million dollars in the making of this collection, which is now invaluable.

A sketch of the life of Sir William Hingston, a prominent surgeon and notable citizen of Montreal, who died four years ago, in his seventy-eighth year, appeared in the January number of the *American Catholic Quarterly*. Like Dr. Emmet, Sir William Hingston was a self-made man. He was the son of a widow in straitened circumstances, and carried on his medical studies while acting as assistant in a drugstore. Yet he succeeded in doing fine work in his subsequent career and attracted the attention of the conservative English-speaking profession, so that more than twenty-five years before his death he was asked to deliver the annual address on surgery before the British Medical Association. At its meeting in Canada, he was one of the honorary presidents and one of those selected for a knighthood on the occasion of Queen Victoria's jubilee. He served two successful terms as mayor of Montreal, became a life senator of Canada, and when he died a session of the Canadian senate was taken up with tributes to this member, who had begun life under such discouraging circumstances.

In Sir William's career there is abundant encouragement for the man who has to contend against difficulties in obtaining a professional training. The story of his two years in Europe just after graduation, when on less than $500 he succeeded in spending prolonged periods in Edinburgh, London, Paris and some of the German cities, getting in touch with the best surgeons in Europe and coming home thoroughly prepared to do good work, is of itself a typical example of his power to overcome what would seem to a less indomitable character impossible obstacles. But his efforts at self-education did not stop there. He became one of the busiest of Montreal's practitioners, occupied mainly with the poor; yet he succeeded in piecing out the fragments of a classical education that he had obtained in a single year at college into a fine classical scholarship. He knew French and German well, and had a thorough command of English, being both an effective orator and a ready writer.

Above all, he showed clearly that it is possible to combine the career of a successful, busy surgeon with that of a citizen who sees and performs his duty to the community. The lives of such men as Emmet and Hingston must prove a stimulus to high professional work and a deep sense of patriotic duty.

ANAPHYLAXIS

In a recent article, Friedberger[1] has reviewed our present knowledge of the subject of anaphylaxis. As a result of the great amount of work devoted to this phase of immunization, both in this country and abroad, it is now better understood, and is even being invoked

2. Hale, Worth: A Comparative Study of Digalen, THE JOURNAL A. M. A., Jan. 1, 1910, p. 35; The Comparative Strength of Digipuratum, Jan. 8, 1910, p. 129.

3. Emmet, Thomas Addis: Incidents of My Life, Professional, Literary, Social, with Services in the Cause of Ireland, G. P. Putnam's Sons, New York, 1910.

1. Friedberger: Deutsch. med. Wchnschr., 1911, xxxvii, 481.

to explain other more obscure phenomena of disease. According to our present conception, the process of anaphylaxis is in brief as follows: On the introduction of the first dose of a foreign proteid into an animal, there occurs a gradual increase of the antibodies for this substance—antibodies already present in small amounts normally. If, now, after a suitable interval, say from eight to ten days, a second dose be given, these antibodies, now present in increased quantities, produce a rapid disintegration of the proteid, with liberation of toxic products. If the animal survives this sudden liberation of poisonous material, farther cleavage of these products rapidly renders them innocuous.

Such a hypersensitization to foreign proteids is peculiar in that for the most part it is necessary to introduce them by some route other than the alimentary canal. When, however, we consider the great breaking up undergone in the process of digestion, it will be readily seen that any characteristic peculiar to a given proteid would ordinarily be so modified before absorption as completely to alter any toxic effect that it might possess. Indeed, the anaphylactic reaction is believed to be due to a splitting up of proteid into exactly the products it would yield in intestinal digestion; the poisonous intermediate products, however, which in the latter case would undergo still farther cleavage before entering the system, are in the former liberated directly into the blood-stream, and so are free to exert their toxic action. In support of this view is the fact that in those cases in which there is excessive antibody formation, the acute anaphylactic reaction is diminished or absent; the probable explanation being that the breaking up of the proteid into its ultimate constituents is so rapid as to prevent the accumulation of toxic intermediate products in quantities sufficient to do harm. Idiosyncrasy to articles of food is to be explained, on this basis, by the absorption of sufficient unmodified proteid to react with antibodies already present, either congenitally or formed under similar previous conditions.

In addition to the "active" anaphylaxis, produced by the direct administration of sensitizing doses of proteid to the animal organism, it is possible to produce "passive anaphylaxis" by transferring hypersensibility to other animals with the serum of treated animals. This so-called passive anaphylaxis belongs in the same class as passive immunization. Further analogy is shown by the necessity of free complement to produce the reaction. If an animal be given its second dose of proteid, in nonlethal amount, at an interval greater than the ten days at which hypersensitization reaches its height, the excess of antibodies present becomes bound, and the animal becomes relatively free from farther reaction. This is the so-called anti-anaphylaxis.

According to the views of Ehrlich, all antibodies are merely the result of the increase of substances already present in the normal animal; and in accordance with this view is the fact that the introduction of a sufficient quantity of foreign proteid into a perfectly normal animal will produce toxic effects. If, however, care be taken to give it in a quantity insufficient to cause death, the antibodies normally present will cause a relatively slow production of the toxic intermediate products, and at the same time formation of both the cleavage products and the antibodies evoked by the injection will take place. If now this serum be transferred to a second normal animal, acute poisoning will intervene — the so-called antiserum-anaphylaxis. The explanation probably lies in the fact that in the second animal there is already present a certain amount of antibody, which, in conjunction with the amount present in the injected serum, is sufficient to produce acute anaphylaxis.

By far the most interesting of the recent developments of this subject are the relations that are being established between anaphylaxis and many infections, both acute and chronic. It is becoming generally accepted that many of the processes which formerly we were wont to ascribe purely to specific toxins are more properly to be considered as due to the interaction of bacterial proteid and antibodies already present, or formed during the infection, in the host. This phase of the subject, however, has been recently taken up in these columns,[2] and need not be discussed further at this time.

Current Comment

SOME PROBLEMS OF SCHOOL INSPECTION

While school inspection has been the subject of much commendatory mention in the public press, some objections have been raised to proposed legislation making it compulsory. The question has been raised as to the propriety of complete examinations requiring exposures of the chest, etc., especially in the older girls, it being urged that parents should be allowed to select the physician to make the examination. As perhaps might have been expected, the sectarian schools of medicine have been more or less to the fore in the objections. This trouble has been encountered in Newark, N. J., where, for instance, examination of the heart and lungs has been insisted on as a feature of school inspection. It is natural that the inspecting authorities should want to forestall criticisms as to the thoroughness of their work, which would be very liable to be made by those not in full sympathy with the movement. It would seem, however, that since the school has no interest in heart disease further than as it affects the functional capacity of the heart, such tests as are necessary might be made without requiring any exposure which would be offensive to the pupils and resented by their parents. It would doubtless be well for those engaged in the work to remember that medical school inspection is at present on trial so far as the general public is concerned, and that lack of tact may prejudice the cause as much as lack of skill, if not more. It is not desirable that medical school inspectors shall be time-servers; but for a school physician to

2. Infection and Anaphylaxis, THE JOURNAL A. M. A., March 11, 1911, p. 746.

strain his brief authority by too arbitrary insistence on methods of inspection which parents have not learned to regard as a matter of course in private practice, would seem to be premature, to say the least. Doubtless, with greater experience, by the exercise of tact, by educating the public and winning its confidence, inspectors will be able in most instances to secure all needed information and at the same time to avoid any occasion for conflict between the authority of the home and that of the school. This is always disastrous, and would be especially regrettable just now in the case of medical school inspection.

MONEY FOR MEDICAL EDUCATION

After a long season of neglect it seems that medical education is coming into its own in regard to financial support. Such benefactions as the recent gift of $200,000 from Dr. and Mrs. Robert W. Long of Indianapolis, toward the establishment of a teaching hospital for the Indiana University School of Medicine, indicate an increase of interest in the cause; and not only are private donors making generous contributions, but legislatures also are making more liberal appropriations for the support of their state university medical schools. Word has just been received that in Alabama $100,000 has been appropriated for the support of the medical school of the state university for the next four years; and from Nebraska comes the news that a like sum has been appropriated to establish all four years of the University of Nebraska College of Medicine on the new campus in Omaha. A smaller but no less important appropriation was that of $30,000 by the Oregon legislature which has made possible a closer relationship between the University of Oregon and its medical department—a relationship which heretofore has been largely nominal. Thus from all sections of the country come tidings of substantial gifts or appropriations for medical teaching institutions that represent the higher standards of medical education. These appropriations give much encouragement to those who have been working for the development of higher standards and lead one to believe that even more liberal appropriations will be made in the future. Surely no state could make a better investment than that which will secure better-trained physicians who are to be responsible for the preservation of the health and, therefore, of the happiness, of that commonwealth.

PROF. THEOBALD SMITH AS EXCHANGE PROFESSOR

Prof. Theobald Smith, Fabyan professor of comparative pathology at Harvard, has been appointed exchange professor for 1911-12 at Berlin University, following a plan inaugurated several years ago for the exchange of educators between the universities of Germany and the United States. This is not the first instance in which Harvard has been drawn on for the exchange professorships, but previously they have been from the faculty of arts and sciences. The drafting of Professor Smith is not only a recognition of the medical department of Harvard, but a high and well-deserved compliment to Professor Smith, who has attained eminence not only as an instructor and for his research work, but also on account of his public scientific services. He was at one time director of the pathologic laboratory of the national Department of Agriculture, and was for ten years professor of bacteriology at Columbian University, Washington, D. C. He was also director of the pathologic laboratory of the Massachusetts State Board of Health, and three years ago was awarded the gold medal of the Liverpool Society for the Study of Tropical Diseases for his studies of Texas fever. He is also known for his studies on metabolism. Professor Smith holds the degree of Ph.B., Cornell, 1881; M.D., Albany Medical College, 1883; honorary degree of A.M., Harvard, 1901; and the degree of S.D. from Harvard in 1910. In 1907 Chicago University gave him the degree of LL.D. The growing recognition abroad of the authority of the New World in medicine will be further advanced by the selection of Professor Smith, who is a worthy representative of the profession of scientific medicine.

A NEW OWEN BILL

Senator Owen has introduced a new department of health bill[1] which appears on the calendar of the sixty-second congress as Senate Bill 1. This bill is an elaboration of S. 6049 introduced by Senator Owen in the sixty-first congress, and has been modified to meet the objections raised against that measure. The principal criticisms, in fact the only ones brought out in the hearings on public health before the house and senate committees, were that there was a possibility of the functions of the state boards of health being infringed on; that the individual liberties of the people might possibly be impaired and that in organizing and administering the federal department of health there might be discrimination against some schools or sects of medicine. All of these objections were based on conjecture rather than fact, were of remote possibility and abundantly guarded against by existing laws and decisions. But in order to remove any possible grounds of objection to the bill, Senator Owen has specifically provided in the present bill that "this act shall not be construed as attempting to authorize the department of health to exercise or to attempt to exercise, without express invitation from the chief executive or other proper authority of the state, any function belonging exclusively to such state, or to enter any premises in any state without the consent of the owner or occupant thereof . . . and provided further that the department of health shall recognize no so-called school or system of medicine." These provisos should amply reassure the sincere opponents of Senator Owen's first bill who may have feared honestly, even though mistakenly, that an intelligent effort on the part of the federal government to investigate the causes of disease and to conserve the lives and health of the people might infringe on his personal rights. Such objectors have, of course, entirely failed to discriminate between the investigation of disease in the abstract and the treatment by individual physicians of individual patients. The former is a perfectly proper function of the federal government which can be exercised without affecting the rights of the individual in the slightest; the latter is and must always remain a personal prerogative, except under a form of government so socialistic in character

1. Miscellany Department, this issue, page 1208.

as to be practically out of the question under existing conditions. Although the new bill explicitly removes all the honest objections which were raised to the old bill, it is not to be expected that these changes will allay the opposition to the measure, on the part of mercenary interests arrayed against further health legislation. Those familiar with the situation know that the sincere, but mistaken, objectors to the first Owen bill were only puppets in the hands of the mercenary interests which feared, and still fear, federal investigation of their business or interference with their ill-gotten profits. It is to be expected that these chronic objectors (for revenue only) will find new and equally far-fetched reasons for objecting to Senator Owen's latest bill. The public, however, will not be slow to detect the reasons for further opposition to a measure distinctively altruistic in character and for the benefit of the public. The bill provides for a department of health with a director at the head; for a subordinate commissioner of health and for the transfer of the Public Health and Marine-Hospital Service from the Treasury Department, the Bureau of Chemistry from the Department of Agriculture and the Division of Vital Statistics from the Department of Commerce and Labor. It also provides for bureaus of sanitary research, child hygiene, vital statistics and publication, food and drugs, quarantine, sanitary engineering, government hospitals and personnel and accounts. Cooperation with the health authorities of any state, as well as conferences of state health officers are also provided for. No provision is made for increased pay for the Marine-Hospital surgeons, as it is generally understood that a separate personnel bill will be introduced. Senator Owen's new bill marks a distinct advance in the development of a law to establish an effective federal department of health.

"APPLIED ETHICS IN JOURNALISM"

Under the above title, Theodore Roosevelt in the *Outlook* for April 15, makes some interesting comments regarding the "patent medicine" evil in its relation to the newspapers. After touching briefly on the fraud and cruelty connected with fake financial advertising, Mr. Roosevelt says:

> The patent medicine advertising represents as great an evil . . . We hear much of the influence exercised by great corporations on the press, and unquestionably this influence has been and is, very serious. Yet it cannot be greater than the evil influence exercised by the backers of objectionable medical and financial advertisements when they spend between thirty and forty millions a year in the daily newspaper press.

After thus speaking of the matter in the abstract, Mr. Roosevelt, as is his wont, comes down to the concrete by calling attention to some of the reasons why this form of fraud on the part of the newspapers is not more often fought. The New York *Herald* until 1907 carried without let or hindrance, in what was called the "Personal Columns," but which should have been designated "Abortionist Columns," advertisements that were both criminal and obscene. In that year, however, the Medical Society of the County of New York found a United States district attorney with sufficient courage to attack this cesspool of filth with the result that a verdict was secured against the proprietor of the *Herald* and he was forced to pay a fine of $25,000. Of the attitude taken by other newspapers regarding this case, Mr. Roosevelt says:

> In this case, by the way, many of the newspapers which are ordinarily of reasonable virtue so hid the facts as to prevent any effective understanding by the public of the real reason for the animosity very naturally shown by Mr. Bennett [proprietor of the *Herald*] through his papers ever since toward all the public officials who were in any way connected with bringing him to justice for his crime.

It is also worth while to call attention, at this time, to the fact that the *Herald*, ever since the "Personal Column" episode, has done its best to vilify and blackguard the medical profession, this, presumably, because its proprietor resents not only the loss of actual cash for payment of the fine, but also the still greater loss of revenue from the abortion advertisers whose "copy" became unacceptable in the eyes of the United States post-office authorities. The *Herald* was one of the first, if indeed it was not the first, of the New York papers to espouse the cause of the "patent medicine" interests' latest organization for fighting the American Medical Association—the National League for Medical Freedom.

Our ex-president also calls attention to the appalling number of "patent medicine" and quack advertisements that appear in the New York *World* and in the "World Almanac" for 1911 and then says:

> A peculiarly objectionable feature of these medical advertisements, exactly as with the financial advertisements, is that it is the poorest class, the most helpless class, of people that are most hurt by them. I believe that legislation could be framed to forbid such advertisements. In default of such legislation there is at least need that we should discriminate in the sharpest way between newspapers which war against this evil and newspapers which encourage it.

On the other hand, Mr. Roosevelt has expressed the greatest admiration for publications, such as *Collier's Weekly*, which have rendered the public a great service by exposing the viciousness and fraudulence of quackery and the "patent medicine" business. His excellent editorial closes as follows:

> We owe hearty respect to the public servant who, like ex-District Attorney Stimson, fearlessly does his duty in bringing to justice a great newspaper that goes wrong, although he knows that his action will be of harm to himself personally; and we are bound to pay a tribute of deserved respect to a paper like *Collier's* when, in a matter so vital to the public well-being, it wages so fearless, aggressive and efficient a fight for honesty and decency.

FOUNDED ON FALSEHOOD

There is at present before the United States Supreme Court a case, the decision in which will either wonderfully strengthen or irrevocably weaken the federal Food and Drugs Act. O. A. Johnson, a mail-order cancer-cure quack of Kansas City, Mo., shipped some of his nostrums in interstate commerce. The labels on these preparations bore the statement that they would cure cancer. As every physician knows, and as a large proportion of intelligent laymen know, this statement is an untruth. The government brought suit, under the Food and Drugs Act, declaring Johnson's nostrums misbranded in that the statements on the labels were false. Johnson fought the case, and it has finally reached the Supreme Court of the United States. He insists that

the Food and Drugs Act was intended by Congress only to deal with the composition of medicines and not with their therapeutic value. When the case was being argued two or three days ago before the justices of the Supreme Court, Solicitor-General Lehmann maintained that, in drawing up the Food and Drugs Act, Congress recognized that it was just as important to deal with the curative effects of medicines as with their ingredients. Justice Lurton interrupted the Solicitor-General by asking whether such an interpretation of the law as the government desires "would not break up the patent-medicine business." Mr. Lehmann replied: "It probably would, and I know of nothing within the scope of Congress that would be more beneficial." The question by the justice and the answer by the solicitor-general are worth pondering over. Men who have reached the positions held by Solicitor-General Lehmann and Justice Lurton cannot, truthfully, be accused of being fanatics or prone to making radical statements. On the contrary they are likely to be, if anything, ultraconservative. Nevertheless, one of these men plainly intimates and the other frankly says that the "patent medicine" business is based on fraud and deceit. No other interpretation of the question and answer seems possible. Justice Lurton asks whether, if the "patent medicine" makers have to tell the truth about their products, it would not destroy their business; Solicitor-General Lehmann says that it would!

Medical News

CALIFORNIA

Personal.—Dr. Emil O. Jellinek, San Francisco, has gone abroad.——Dr. Norman D. Morrison, San Mateo, has been elected trustee of the San Mateo Union High School District.

Society Meeting.—Long Beach Medical Society, at its annual meeting, April 7, elected Dr. William H. Newman, president; Dr. Francis L. Rogers, secretary-treasurer; Dr. Albert C. Sellery, councilor. A committee composed of Drs. Albert C. Sellery, William H. Jones and Theophilus C. Donnell was appointed to arrange for the entertainment of the delegates of the American Medical Association.

Arequipa Sanatorium.—A sanatorium for the treatment of incipient cases of tuberculosis is assured to San Francisco by the gift of a tract of 40 acres of land near Fairfax, Marin County, by Henry Bothin. Plans for the structure have been made, and $5,000 has thus far been subscribed for the erection of the building. The entire cost of the institution will be about $20,000. Dr. Philip King Brown, San Francisco, is to be director of the sanatorium and the medical board will include Drs. Louis P. Howe, Richard G. Broderick and Lewis S. Mace, all of San Francisco. The institution is to be known as Arequipa, an Indian term meaning a place of rest.

CONNECTICUT

County Physicians Hold Meeting.—The one hundred and nineteenth annual meeting of the Hartford County Medical Association was held in Hartford, April 4. The following officers were elected: president, Dr. Harmon G. Howe, Hartford; vice-president, Dr. Henry A. Deane, South Windsor; secretary-treasurer, Dr. Paul P. Swett, Hartford; councilor, Dr. Oliver C. Smith, Hartford; censor, Dr. Frederick B. Willard, Hartford; delegates to the state society, Drs. Charles M. Wooster, Tariffville; Myron P. Robinson, Windsor Locks; Thomas G. Sloan, South Manchester; Paul P. Swett, Hartford; William R. Miller, Southington; John F. Dowling, Hartford, and Frank L. Waite, Hartford.

ILLINOIS

State Takes Over County Institutions.—By the terms of an agreement ratified April 12 by the house committee on appropriations, it is agreed to place on the omnibus appropriation bill an item of $450,000 to care for the ordinary and extraordinary expenses of Cook County Institutions, Dunning, until July 1, 1913.

Personal.—Dr. Emery W. Goembel, Rockford, who was operated on for appendicitis, April 10, is reported to be well on the road to recovery.——Dr. James A. Rutledge, Elgin, has been appointed medical director of the Modern Woodmen sanatorium, Colorado Springs.——Dr. Willis G. Hatch, Rockford, fractured his arm above the wrist while cranking his automobile, April 2.——Dr. Jacob S. Kauffman, Blue Island, has been appointed a member of the consulting staff of Oak Forest Infirmary.

State Alienists Organize.—The members of the medical staffs of the various state hospitals held a meeting in Elgin, April 12 and 13, and organized the Illinois State Hospitals Medical Society, and elected the following officers: Dr. H. Douglas Singer, Kankakee State Hospital, president; Dr. Charles F. Read, Watertown State Hospital, vice-president; and Dr. Ralph T. Hinton, Jacksonville State Hospital, secretary-treasurer. The object of the society is to study diseases of the insane, epileptics and other classes of unfortunates who are inmates of state institutions.

Recent State Board Cases.—In the case of the people versus Madame Florencia A. T. Powella, M.C.S., a "bloodless medical surgeon chiropodist," the defendant was tried before a jury in the municipal court for practicing medicine without a license, was fined $100 and costs. After a motion for a new trial had been overruled she appealed her case.——The State Board also prosecuted "Prof." J. C. Fisher, who was found guilty and fined $100 and costs for practicing medicine without a license. This individual is said to have had an altar in his front room before which patients were brought. The "Professor" murmured in front of the altar and finally turned and stated the nature of the ailment. He then rubbed the neck and temple of the patient, gave him medicine and charged him $2.

Antituberculosis Research.—The latest donation of James A. Patton, Evanston, is an additional fifty thousand dollars to be devoted to the cause of medical research regarding tuberculosis. This donation is to be used to establish research fellowships in connection with Northwestern University Medical school. Mr. Patton's original gift of $200,000 will be devoted to the establishment of a new chair in the medical school to be known as the chair of experimental or research medicine. The entire time of the professor in charge of this department will be given to investigation along lines indicated, and the work of the department will be in reciprocity with the other laboratories of the school. Four recent graduates will be paid a living salary, and will be induced to remain a year or longer in the laboratory before engaging in practice. In this way a school of investigation will be established, and the abler men will be induced to remain to engage in research work. Dr. Arthur R. Edwards, dean of the school, has been selected as head of this movement.

Chicago

Small-Pox.—During the week ended April 15, fourteen cases of small-pox were sent to the Isolation Hospital. Of these three were imported, thirteen had never been vaccinated, and the other one had an imperfect doubtful scar made in childhood. Five cases were taken to the hospital from one family. The physician in this case pronounced the disease chicken-pox and failed to report the case to the department of health.

Personal.—Dr. John B. Murphy, who has been ill with typhoid fever, is convalescent.——Dr. E. Fletcher Ingals is ill with typhoid fever but is reported to be doing well.——Dr. Eugene S. Talbot has been ill for several days with pneumonia, but is reported to be in good condition.——Dr. Clara Ferguson has been appointed a member of the medical staff of Cook County Hospital.——Drs. Hugh N. MacKechnie, John A. Graham, George N. Pratt, Frank J. Fara and Douglas A. Payne have been appointed members of the consulting medical staff of Oak Forest Infirmary.——Dr. Willis O. Nance was elected alderman at the recent election.

Dr. Evans' Valedictory.—On retiring from the office of health commissioner of Chicago, Dr. William A. Evans makes the following statement to the public in the *Weekly Bulletin:*

When, in 1907, I assumed responsibility for the health department, I wrote that the work had been evolving; my predecessors had brought it up to a certain point and that I would try to build still further. I think that the reputation of the department throughout the world, the growth of the older activities of the department and development of new activities, the greater security of the people and a better food and air supply, and a greater public interest in health, are further steps in that evolution. Perhaps most significant of all, the department is incorporated as, and in truth is, a school of sanitary instruction. Here, too, there is evolution, since the nucleus of it was this bulletin, begun by Drs. Reynolds and Reilly. I am steadfast in the hope and I assure the public of my belief that my successor will continue this evolution, fighting off the few in the interest of the great, needful mass.

And now I wish to say in sincerity that the results accomplished have been due to the brains, energy and faith of the men in charge of bureaus, and the men and women under them; to the vision and the courage of the mayor; to the cooperation of other departments of the city government; to the city council, which has passed every important ordinance asked of it, save one—that requiring that milk should be kept cold.

KANSAS

Opposes Contract Practice.—Shawnee County Medical Society, at its April meeting, adopted an amendment providing for the expulsion of any member of the society proved to have engaged in lodge or club practice.

LOUISIANA

Lumber Company will Operate Hospital.—Beginning with April 1, the Bogalusa Hospital is being operated directly by the Great Southern Lumber Company. Dr. Herbert C. Cole has been made chief surgeon of the institution.

Parish Election.—Calcasieu Parish Medical Society, at its annual meeting, at Lake Charles, April 4, elected Dr. Allen J. Perkins, Lake Charles, president; Dr. Hugh L. Sanders, West Lake, vice-president; Dr. Samuel George Kreeger, Lake Charles, secretary-treasurer (reelected), Dr. Edward R. Gandy, West Lake, delegate to the state society, and Dr. Norman S. Craig, Jennings, alternate.

New Home of Parish Society.—The new home of the Orleans Parish Medical Society, New Orleans, was dedicated with fitting ceremonies, March 13. The principal address of the evening was delivered by Dr. Stanford E. Chaillé on "The Organization of the Louisiana State and Orleans Parish Medical Societies." On March 27, the newly elected officers were installed, including Dr. Benjamin A. Ledbetter, president; Drs. Eugene H. Walet and Charles N. Chavigny, vice-president; Dr. Lawrence R. DeBuys, secretary; Dr. William H. Block, treasurer; Dr. Homer Dupuy, librarian, and Drs. Joseph T. De Grange, Arthur Nolte and William H. Seemann, directors.

MARYLAND

The State Sanatorium.—Plans for the new hospital buildings in connection with the Maryland State Tuberculosis Sanatorium, Sabillasville, have been finished. A new administration building is to be erected and also additional wings will be built, which will increase the capacity of the institution to 200.

Annual Meeting of Ladies' Auxiliary.—The Ladies' Auxiliary of the Widows' and Orphans' Fund, Medical and Chirurgical Faculty of Maryland, held its annual meeting in Baltimore, April 11. The following officers were elected: president, Mrs. William G. Gombel; vice-presidents, Mrs. Albert H. A. Mayer and Mrs. John G. Jeffers; recording secretary, Mrs. L. K. Michael; corresponding secretary, Mrs. Charles H. Bubert; treasurer, Mrs. Marshall L. Price, and executive committee, the officers and Mrs. James F. H. Gorsuch, Mrs. T. Casper Gilchrist, Mrs. William E. Wiegand and Mrs. George L. Duane.

Personal.—Dr. Warren P. Morrill, M. C. N. G., Md., Baltimore, has been detailed to take part in the maneuvers at San Antonio, Tex.——Dr. Thomas J. Coonan, Westminster, has been elected chairman of the Democratic State Central Committee for Carroll County.——Dr. R. A. Shankwiler, formerly resident physician at Eudowood Hospital for Tuberculosis, has been made superintendent of the Detroit Tuberculosis Sanatorium.——The emperor of Germany has conferred the order of the crown, second class, on Dr. William H. Welch, Baltimore, in appreciation of his services in propagating German medical science in the United States and in spreading the use of the German language in the medical schools of America.

MASSACHUSETTS

Boston Reappointments.—Dr. Samuel H. Durgin has been reappointed chairman of the board of health; Dr. Nathaniel W. Emerson, a trustee of the infirmary department, and Dr. Miles Martin, overseer of the poor.

The State Society Meeting.—The annual meeting of the Massachusetts Medical Society will be held in Boston, June 13 and 14. Two meetings of each section will be held the first day, and the section on tuberculosis will be held on the afternoon of that day. One of the sessions of the medical section will be devoted to a symposium on syphilis. The councilors' meeting will be held at noon on Tuesday and the Cotting lunch will be served as usual. The section meetings and the meeting of the council will be held at the Harvard Medical School. School buildings and laboratories will be open to the society and special scientific exhibits or exhibits illustrating papers of interest to members will be given in the laboratories. The Shattuck lecture and reception will be held as usual on Tuesday evening in the medical library. The annual meeting and discourse will be held on Wednesday at the medical school, after which the annual dinner will be served at Symphony Hall. Immediately after the dinner the society will adjourn to the Country Club to witness the annual inter-district baseball game.

MISSOURI

Additional Accommodation in Tuberculosis Pavilion.—Through the efforts of the local antituberculosis society, six beds have been added to the pavilion for tuberculosis patients at the Kansas City General Hospital, making the total capacity twenty-two beds.

Colored Physicians to Work Among Their Race.—At the request of Dr. Walter S. Wheeler, health commissioner of Kansas City, the hospital and health board have approved the assignment of two colored physicians, Drs. Charles F. Clark and Lloyd E. Bailer, who will be assigned to look after colored charges in the city.

St. Louis

Intern Examination Held.—As the result of the competitive examinations for interns for the City Hospital, St. Louis University medical students obtained twenty-seven places and Washington University seventeen.

Personal.—Dr. Henry S. Atkins, superintendent of the Municipal Tuberculosis Sanatorium, has resigned.——Dr. Arthur H. Sewing, first resident physician at the City Hospital, has been appointed resident physician, vice Dr. Walter R. Hewitt, resigned.——Dr. H. Wheeler Bond, health commissioner, has sent to the comptroller a check for $1,799.18, representing the difference between the amount received as fees for registering vital statistics under the state law and the expense of conducting the office.

NEW HAMPSHIRE

Medical School Commencement.—The one hundred and thirteenth graduation exercises of Dartmouth Medical School, Hanover, were held, March 28, in College Hall. Dr. John M. Gile delivered the address to the graduating class, and President Ernest F. Nichols conferred degrees on a class of nine.

County Medical Society Election.—At the sixth annual meeting of the Hillsboro County Medical Society, held in Nashua, April 4, the following officers were elected: president, Dr. Herbert L. Smith, Nashua; vice-president, Dr. James B. Pettingill, Amherst; secretary-treasurer, Dr. Ella B. Atherton, Nashua (reelected); auditor, Dr. Bradford Allen, Nashua, and delegate to the state society, Dr. Walter H. Abbott, Hillsboro.

National Guard Appointments.—At the recent meeting of the governor's council, the following nominations were made to fill vacancies in the medical department of the New Hampshire National Guard: Captain Russell Wilkins, Concord, promoted to major; Lieutenant Bertell L. Talbot, Peterboro, made captain, vice Dr. Wilkins, promoted; Dr. Robert J. Graves, Concord, commissioned first lieutenant, vice Dr. Talbot, promoted, and Dr. Charles S. Walker, Keene, first lieutenant, vice Dr. Jesse B. Hyland, Keene, resigned.

NEW YORK

Sanitarium for Dunkirk.—Plans have been completed for a sanitarium to be built at Cobb Mineral Springs, Dunkirk, to cost $15,000, to accommodate thirty patients and be completed July 1.

Matteawan Investigation.—Dr. Austin Flint, Dr. Carlos F. MacDonald and Goodwin Brown, who were named by Governor Dix to investigate conditions at the Matteawan State Hospital, have begun their work. They will question each one of the 897 patients as to food, treatment and other conditions. It is expected that the investigation will require several weeks.

Rabies in Yonkers.—Information has come from the New York City Health Department that during the last two months thirteen persons have received treatment for mad dog bites. A representative of the health department has advised instant cooperation with the state authorities. All dogs have been barred from the streets for sixty days unless muzzled or on a leash.

County Society Meeting.—At the quarterly meeting of the Oneida County Medical Society, held in Utica, April 10, communications were read from three physicians who were expelled from the society a year ago for violating the principles of ethics by advertising certain cures, giving notice that they intended to appeal to the state medical society from the decision of the county society. A general discussion was held on contract practice and a committee was appointed to confer and report on the matter.

New York City

Addition to Sloane Maternity Hospital.—Plans have been filed for the building of four additional stories on the Sloane Maternity Hospital for private patients. The cost of this addition will be about $60,000.

Cancer Home Asks Aid.—St. Rosa's Home devoted to the care of victims of incurable cancer is making an earnest effort to complete a fund of $50,000 to be used in the erection of a new building. The building fund at present amounts to $8,142.

New Step in the Antituberculosis Movement.—Babies may be seen in Central Park wearing the admonition "Please do not kiss me, I do not like it. It is harmful." It is hoped that this will assist in limiting other diseases besides tuberculosis.

Vacancy in Clinic.—Washington Heights Hospital announces vacancies in the medical and surgical clinic of the institution, Tuesday, Thursday and Saturday from 2 to 4 p. m. Application should be made to Dr. Louis Neuwelt, 2424 Seventh Avenue, New York City.

Medical Staff Resigns.—The entire medical staff of St. John's Hospital, Long Island City, is said to have resigned. The reason is said to be the objection of the members of the staff to the rules governing the institution. The 750 patients in the institution are being cared for by the visiting staff.

Against Bronx Hospital.—The State Board of Charities has disapproved of the incorporation of the Bronx Hospital which Manhattan physicians have been anxious to establish in the Bronx, but which was opposed by physicians in that locality. The Bronx physicians stated that they had a plan of their own on foot to start a hospital and they regarded the efforts of the Manhattan physicians as an encroachment on their territory.

Ships Bring Disease.—The death of two passengers on the Greek steamship *Themistocles* and of two on the Fabre liner *Germania,* from cerebrospinal meningitis, have caused the detention of the passengers in quarantine as precautionary measures.——Two cases of spinal meningitis were discovered among passengers on the Fabre liner *Venezia,* on its arrival in New York, March 29.——The steamer *Verona,* which arrived from Italy, March 31, was detained in quarantine on account of a case of small-pox among cabin passengers.

The Milk-Supply of New York City.—Commissioner Lederle, in an address before the International Pure Milk League, outlined the work of the department in its effort to secure pure milk. He stated that arrangements had been completed for the opening of fifteen milk stations. The health department will furnish physicians, nurses, milk inspectors and ice-boxes but will not handle the milk. They asked dealers to bid for the privilege of furnishing the milk. They have decided that for the present they will not pasteurize the milk but will instruct the mothers in the modification in their homes. The greatest problem that confronts the health department is the 14,000 little stores where milk is sold in small quantities.

Health Department Bulletins.—Recent bulletins of the department of health of New York City refer to the public control of venereal diseases in the city, recommending the early adoption of the plan of the sanitary control of such diseases; announces the passage of a resolution requesting the board of aldermen to approve of the issue of special revenue bonds to the amount of $10,000 for the purchase of food supplies for patients at the two day-camps maintained by the department on the ferry boats *Middletown* and *Susquehanna,* as these camps are among the most effective agencies in the extension of relief to the tuberculous poor, and in the campaign for the prevention of tuberculosis. The bulletin of April 7 gives a report of the work of the division of food inspection, showing the arrest of four candy dealers for violation of the sanitary code, and of one fruit dealer who sold decayed fruit, and the condemnation of 4,617 pounds of foodstuff on April 5. The succeeding bulletin announces that twenty-five arrests had been made on the upper East Side for the exposure of foodstuff and for offering decayed food for sale in violation of the provisions of the sanitary code. Twenty-two of the accused were found guilty and fined. The resolution of the board of health on the sanitary control of venereal disease for the protection of public health has been endorsed and approved by the New York Urological Society. The bulletin of April 10 is devoted to diarrheal diseases of infants under one year of age. During the first three months of 1911, there were 508 deaths of children from this cause in Greater New York as compared with 348 during the corresponding period of 1910. This increase has taken place almost entirely in institutions and hospitals where children are cared for. This is accounted for by the fact that the bulk of these deaths occurred in the New York Foundling Hospital where abandoned children, who are generally of low vitality, are received and cared for. The bulletin of April 11 deals with the spitting nuisance, and shows that during the first quarter of 1911, 434 arrests were made, 279 fines were imposed amounting to $414; forty-four defendants were discharged, and sentence was suspended in 111 cases. An interesting feature of the report is the low percentage of the accused who were fined from the Boroughs of Brooklyn, Queens and Richmond, as compared with those of Manhattan and Bronx.

NORTH CAROLINA

Personal.—Dr. William W. Faison, Goldsboro, has been elected for a second six-year term as superintendent of the State Hospital for Colored Insane. The institution now contains 730 patients.——Drs. Daniel G. Caldwell, Concord, and Gurley D. Moose, Mount Pleasant, have been elected members of Cabarrus County Board of Health.——The new Edgecombe County Board of Health has elected Drs. James C. Braswell, Whitakers, and Henry H. Whitaker, Hilliardston, as additional members of the board.——Drs. Andrew L. Pendleton and William J. Lumsden, Elizabeth City, have been appointed members of the board of health of Pasquotank County.

Hookworm Activity.—Dr. John A. Ferrell, assistant secretary of the State Board of Health, in his report of the hookworm investigation for the three months ended March 3, shows that 1,153 of the 1,500 practitioners in the state have made reports on hookworm disease, and 519 of these report that they have treated cases. All together 17,933 cases of hookworm were reported as having been treated by physicians of the state. Dr. Ferrell estimates that 25,000 cases have probably been under treatment. There were 16,994 specimens sent to the laboratory for examination and hookworm infection was found in 5,178 of these. The laboratory of hygiene has been made use of by 483 physicians up to date. In the inspection of schools, it is reported that 266 white and 69 colored schools have been inspected and that nearly 6,000 people have been informed about hookworm disease by public lectures. The number of school children reached by talks and visits of district directors of sanitation is estimated at 20,000. The state legislature made an appropriation of $5,000 for the work against hookworm.

OHIO

Laboratory Ready.—The bacteriologic laboratory of the Toledo health office, for which $1,000 was appropriated by the council, is now ready for operation.

Personal.—Dr. and Mrs. William B. Van Note have returned to their home in Lima after spending the winter in Miami, Fla.——Dr. John P. Beneke, Cincinnati, was painfully injured in a runaway accident, March 29.——Dr. Andrew J. Timberman, Columbus, who has been ill with septicemia in Lakeside Hospital, Cleveland, is reported to be improving.

TENNESSEE

Annual Clinic at Meharry.—The annual surgical clinic at Meharry Medical College, Nashville, was held March 13-18, with Dr. Daniel H. Williams, Chicago, as chief of clinic.

Does Not Want Prescriptions Refilled.—Washington County Medical Association, at a recent meeting in Johnson City, adopted a resolution demanding that prescriptions shall not be refilled by druggists.

Folder on Tuberculosis—The board of health of Nashville has prepared an instructive folder on "Tuberculosis, Its Care and Prevention," which is being distributed very generally by the Antituberculosis League of Nashville.

State Association Meeting.—The seventy-eighth annual meeting of the Tennessee State Medical Association was held in Nashville, April 11-13, under the presidency of Dr. John A. Witherspoon, Nashville. Chattanooga was selected as the place of meeting for 1912. The following officers were elected: president, Dr. Charles J. Broyles, Johnson City; vice-presidents, East Tennessee, Dr. James H. Atlee, Chattanooga; West Tennessee, Dr. John D. Brewer, Newbern, and Middle Tennessee, Dr. Wesley J. Breeding, Ravenscroft; secretary-editor, Dr. Perry Bromberg, Nashville; delegate to the American Medical Association, Dr. Jere L. Crook, Jackson; alternates, Drs. Octavius Dulaney, Dyersburg, and A. Bennett Cooke, Nashville, to fill the unexpired term of Dr. Sidney S. Crockett, Nashville.

TEXAS

Gift to College.—Dr. and Mrs. James H. Wayland, Plainview, announce a gift of $100,000, on April 13, to the Wayland Baptist College, which bears their name.

Approves of Lay Press.—The question of whether the reports of meetings of Harris County Medical Society should be excluded from lay newspapers in the future was put to a vote at the meeting of March 31 and overwhelmingly voted down.

Man Arrested Was Not Member.—At the meeting of the Bexar County Medical Society in San Antonio, March 9, a resolution is said to have been adopted stating that "Dr. Herman T. Wolff, recently arrested by order of the justice of the peace, is not a member of this society and is in no way related to, and should not be confused with Dr. William M. Wolf, who is a worthy member in good standing of said county society."

Personal.—Dr. Joseph H. Reuss, Dallas, has purchased Salome Hospital, Cuero, from the Ladies' Hospital Association and will take charge of the institution about June 1.——Dr. John S. Turner, Dallas, has been reelected medical adviser of the Southland Life Insurance Company.——Dr. J. W. Sandlin has been appointed health officer of Humble.——Dr. Francis G. Floeckinger, Taylor, has let the contract for a private sanitarium to cost $15,000.

Medical Department Organized.—By orders from the adjutant general's office, March 27, the Medical Department of the Texas National Guard is defined. It consists of a medical corps with one chief medical officer with the rank of major, four majors, ten captains and seven first lieutenants. Dr. Alois B. Kennedy, Bonham, remains as chief medical officer. The hospital corps will remain as at present with headquarters in Dallas, and with Captain Fred B. Johnston, Dallas, in active charge.

UTAH

Ask for Military Sanitarium Near Salt Lake.—A memorial to congress asking that a naval and military sanitarium be established at the hot springs north of Salt Lake, and tendering a site free of cost to the government, has been adopted by both branches of the legislature.

District Society Election.—At the annual meeting of the First District Medical Society, held in Logan, the following officers were elected: president, Dr. David C. Budge, Logan; vice-president, Dr. Charles A. Canfield, Preston, Ida.; and secretary-treasurer, Dr. Eugene H. Smith, Ogden. The society passed a resolution that the State Board of Health be given power to require listing of social disease by number, the name of the individual affected not being given.

Elections.—At the annual meeting of the State Board of Health, Dr. Francis S. Bascom, Salt Lake City, was unanimously reelected president, and Dr. Theodore B. Beatty, Salt Lake City, secretary.——The Utah State Board of Medical Examiners met for reorganization, April 5, and elected Dr. David C. Budge, Logan, president; Dr. Frederick W. Taylor, Provo, vice-president; Dr. George F. Harding, Salt Lake City, secretary, and Dr. Frederick E. Straup, Bingham Canyon, treasurer.

Personal.—Dr. Albert N. Hanson, Salt Lake City, has been elected physician of Salt Lake County, vice Dr. Thomas G. Odell, Salt Lake City.——Drs. Philemon M. Kelly, American Fork, Horace C. Holbrook, Lehi, and Frank E. Winter, Payson, have been appointed deputy physicians of Utah County.——Drs. E. L. Emrich, Alexander G. Robertson, Sandy, Frederick E. Straup, Bingham, and Milford B. Bransford have been appointed health officers of the several districts of Salt Lake County.——Dr. T. William Stevenson has been appointed assistant physician of Salt Lake County.

GENERAL NEWS

Interurban Clinicians Meet.—The thirteenth meeting of the Interurban Clinical Association was held at Johns Hopkins Hospital, Baltimore, April 7 and 8. The meeting was opened by the president, Dr. Alfred Stengel, Philadelphia, and the address of welcome was made by Dr. Thomas McCrae of the medical staff of Johns Hopkins University.

Pathologists Elect New Officers.—The American Association of Pathologists and Bacteriologists held its annual meeting in Chicago, April 14, and elected the following officers: president, Dr. Richard M. Pearce, Philadelphia; vice-president, Dr. John J. McKenzie, Toronto, Ont.; secretary, Dr. Harold C. Ernst, Boston; and treasurer, Dr. Frank B. Mallory, Boston.

Congress on Hygiene.—The Fifteenth International Congress on Hygiene and Demography will be held at Washington, D. C., Sept. 23-28, 1912, authorized by Congress. Acceptances have already been received from twenty-two foreign governments. English, French and German are to be the official languages for papers and discussions. Dr. Henry P. Walcott, Boston, will be active president. Invitations have been sent to the governors of each state to appoint a committee of not more than five members to cooperate with the committee on organization in planning and preparing the exhibition of the congress. The secretary-general of the organization is Dr. John S. Fulton, Washington, D. C. Dr. William H. Welch, Baltimore, is chairman of the executive committee. The work of the congress will be divided in nine sections: that of hygienic microbiology and parasitology will be presided over by Dr. Theobald Smith, Boston; that on dietetic hygiene and hygienic physiology, by Prof. Russell H. Chittenden, New Haven, Conn.; that on hygiene of infancy and childhood and school hygiene, by Dr. Abraham Jacobi, New York City; that of industrial and occupational hygiene, by Dr. George M. Kober, Washington, D. C.; that of control of infectious diseases, by Dr. Hermann M. Biggs, New York City; that of state and municipal hygiene, by Dr. Frank F. Wesbrook, Minneapolis; that of the hygiene of traffic and transportation, by Dr. Walter Wyman, surgeon general, U. S. P. H. and M.-H. Service, Washington, D. C.; that of tropical, military and naval hygiene, by Dr. Henry G. Beyer, medical director, U. S. Navy, Washington, D. C.; and that of demography by Prof. Walter F. Willcox, Cornell University, Ithaca, N. Y. The exhibition is intended to illustrate the present status and recent progress of public hygiene and vital statistics, especially in the United States, and will be kept open for a week or more after the close of the congress. The director is Dr. Joseph W. Schereschewsky, U. S. P. H. and M.-H. Service.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, April 8, 1911.

The Bleaching of Flour

As shown by the agitation in favor of "standard bread," described in a previous letter to THE JOURNAL, much attention is now being directed to the composition of bread, and the whiteness of bread, previously regarded as a sign of quality, is now denounced as obtained by sacrificing some of the most important constituents (protein and salts). The whiteness is sometimes obtained by chemical bleaching of flour and this is pointed out as another disadvantage, and Dr. E. W. Hamill, government food inspector, has issued an important report on this subject. The practice of flour bleaching originated in Great Britain about ten years ago. Various substances have been used as bleaching agents, but nitrogen peroxid is the only one which has given satisfactory results, and all commercial bleaching of flour at present depends on the use of this substance. Dr. Hamill thinks that when bleaching is properly carried out it produces no appreciable effect on the qualities of flour. It may be of assistance in maintaining uniformity in the appearance of flour milled from different wheats, but at the same time it enables the miller to use cheaper wheats and to transform what would otherwise be a cheap dark-colored flour into a whiter higher-priced article. Owing to bleaching, color is no longer a criterion of the quality of flour. Among "improvers" added to flour is acid calcium phosphate. As this sometimes contains arsenic as an impurity this practice is serious. A sample improver recently examined was found to contain 0.07 grain of arsenic per pound. Dr. Hamill concludes that these sophistications are attended with risk to the consumer.

Prof. Karl Pearson's Work

In a previous letter to THE JOURNAL, the munificent endowment of a chair of eugenics at the University of London by the late Sir Francis Galton, and his wish that its first occupant should be Prof. Karl Pearson, were reported. The position of Professor Pearson in biologic science is rendered unique by his mathematical methods. As professor of applied mathematics in the University of London, he has brought to bear on biologic problems an unprecedented knowledge of mathematics. It was the work of Sir Francis Galton, who largely used mathematical methods, which induced Pearson to enter this field, in which he may now be regarded in some sense as Sir Francis Galton's successor. His first labors were directed to the discovery of methods for the description of the various types of variation in living creatures. These methods, which he elaborated more than fifteen years ago, have stood a prolonged trial. They have been used for the elucidation of an enormous mass of phenomena, ranging from the stature of school children to the powers of the leukocytes to ingest microbes. Sir Francis Galton first realized the importance of what is called correlation and showed how to measure it. Thus two characters are often found associated with a frequency which is greater than can be attributed to chance but not sufficient for the relation to be regarded as cause and effect.

there is a general impression that tall parents tend to have tall children; but it is also known that a tall father will not inevitably have a tall son. The relation between the stature of the parent and the stature of the son is neither one of obvious cause and effect on the one hand, nor one of pure chance on the other. To determine the exact value of the relation between these two extremes is the study of correlation. In this field, Prof. Pearson has worked indefatigably. He has devised methods for determining the correlation in a great variety of cases, and also for judging as to the weight to be attached to determinations based on a limited number of trials. In a long series of papers, many of which have appeared in the the journal *Biometrika* edited by him, Professor Pearson and his pupils have applied these methods to problems taken from all departments of biology, medicine and sociology. The intensity of inheritance of physical and mental characteristics in man, variation in different types of plants and animals, the value of vaccination and antityphoid inoculation, the relation between social status and fertility, and the respective importance of hereditary tendencies on the one hand and of increased opportunities for infection on the other in the spread of consumption, are examples of the subjects discussed. The work has been done at the University of London Eugenics Laboratory established by Sir Francis Galton. Probably half of the rising generation of mathematical statisticians are pupils of Professor Pearson or have been profoundly influenced by his teaching.

Infectious Diseases in London

The epidemic of measles described in a previous letter to THE JOURNAL is on the decline. The deaths from the disease which in the preceding three weeks have been 175, 197 and 182 have fallen to 153 in the last week, but this figure is ninety-two above the average. The outbreak of small-pox is not yet quite over. Three patients have been admitted into hospital in the past week against ten, one and one in the previous three weeks. There are now twenty-eight small-pox patients in the hospitals.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, April 7, 1911.

Mild and Curable Forms of Myocarditis

On April 4, Dr. Charles Fiessinger of Paris read a paper before the Académie de médecine, the purpose of which was to show that toward the end of attacks of certain infectious diseases (acute articular rheumatism, influenza) asystolic conditions are observed which are really akin to mild forms of myocarditis. In spite of their gravity, these conditions of cardiac insufficiency may be completely cured under treatment by digitaline in small doses, continued over a long period, such as 0.0001 decimilligram of digitaline crystalisée for ten consecutive days. At the end of this period of time the medication is suspended for five days, then resumed during ten days, and so on for several months.

Salvarsan and Venous Thrombosis

On March 31, Dr. Darier, physician of the hospitals of Paris, read, before the Société médicale des hôpitaux, a paper by himself and M. Cottenot, on a series of observations which showed that thrombosis, which is sometimes observed after venous injection of salvarsan, is due to the hyperalkalinity of the solution, and that alkaline solutions of this drug are injurious to the red blood-corpuscles. One should, therefore, inject into the veins only a faintly alkaline solution prepared at the moment of using and containing an excess of sodium hydroxid only sufficient to prevent the solution from becoming turbid during its injection.

Dr. de Massary reported that he had made three intravenous injections of salvarsan in a woman. Two were made with a faintly alkaline solution; there was no alteration in the veins. The third was made wit ha hyperalkaline solution, and immediately during the injection the veins became indurated and remained so for fifteen days.

According to Dr. Milian, the formation of venous thrombosis is due, not only to the alkalinity of the solution, but also to the degree of dilution. Since he has used very diluted solutions followed by lavage of the wall of the vein with injected physiologic serum, he has not observed a single case of thrombosis.

The Name of Malta Fever

The discussion previously mentioned in THE JOURNAL (THE JOURNAL, March 11, 1911, p. 755), and the objections raised to a geographic name have caused the commission of the Académie de médecine to decide that it would be desirable to adopt a name founded on the pathogenesis of the disease. It has consequently adopted the term *mélitococcie*, which implies the idea of infection by a specific microbe common to man and to the lower animals, and which is, at all events, not offensive to any nationality.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, March 31, 1911.

Personal

On the ninetieth birthday of the prince regent of Bavaria, Prof. v. Müller of Munich received the title of privy court counselor.

Privat-docent Dr. Scheibe of Munich has been called to the chair of otology at Erlangen as the successor of Professor Denker.

Professor Winterstein has been appointed successor to Professor Nagel as director of the physiologic institute at Rostock.

Substitution of Roman Characters for German Script

The committee on petitions of the Reichstag has referred to the imperial chancellor a communication asking for official permission to substitute the Roman characters for the German script and gothic letters. The petition sets forth that it would be desirable for Germany to take this step which other nations took long ago. The angular so-called German script is not to be entirely suppressed, but the gothic characters are to be limited to ornamental printing, and it shall be taught in the third or fourth school year, so that pupils may be able to read it, but not be taught to write it. Against this proposition a great storm is rising, in which patriotism expresses itself in the preference for the German script. The argument is raised that for national reasons, the script used in Germany for hundreds of years should not be rejected. If, however, it is asserted that the angular letters are especially adapted to the words of the German language and that for this reason the public should not be deprived of them, it is sufficient to reply that in medical literature for decades the Roman characters have been employed almost exclusively for printing without a single physician making any objection to them.

The Third International Congress of Laryngology and Rhinology

While many congresses will meet this year in Dresden on account of the international exposition of hygiene, the third international congress of laryngology and rhinology will hold its meeting in the latter part of August in Berlin. At its head is the senior of the laryngologists, Prof. B. Fraenkel. I suppose that Professor Fraenkel retains his position only for the reason that he wishes to preside over the congress as an active professor; otherwise he would already have determined on account of his health to resign his office. Already 600 specialists from all civilized countries have announced their intention to be present at the congress. Representatives of the imperial and state authorities belong to the honorary committee. The municipal authorities of Berlin have appropriated $2,000 (8,000 marks) for the social features of the meeting.

A Motherhood Fund

In the small manufacturing city of Sebnitz in the so-called Switzerland of Saxony there has lately been created a local association to assist mothers. The occasion of this was the fact that in spite of the introduction of nursing premiums, only 55 per cent. of the women nursed their children and the infant mortality amounted to 20 per cent. All women living in the city may apply to the association if their own income or that of their family does not exceed $475 (1,900 marks) yearly. Membership once obtained does not expire until the income amounts to more than $600 (2,500 marks). The members pay a monthly fee of 12 cents (50 pfennigs) and receive in return the following assistance after childbirth: If the membership has continued for a year the fund pays back the monthly fees, $1.50 (6 marks), and adds $3.50 (14 marks) as lying-in money; two years' membership entitles one to $3.00 return fees and $4.50 lying-in money; three years' membership affords $4.50 and $5.50; that is, a lying-in woman who has belonged to the club three years receives from it $10 (40 marks). On the birth of twins an addition of $2.50 (10 marks) is paid. If the child dies during the first week or is born dead, only the fees are returned. If the mother dies, the child or the father of a legitimate child may claim the complete amount. Needy nursing mothers who belong to the club are entitled, in addition to the lying-in money, to a liter of milk daily for the improvement of their own nutrition.

Miscellany

A Bill to Establish a Department of Health, and for Other Purposes

Senator Owen, on April 6, introduced Senate Bill 1, to take the place of S. B. 6049, introduced by him at the last session of Congress. The bill follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:

SEC. 1. That there be at the seat of government an executive department known as the Department of Health, and a Director of Health, who shall be the head thereof; and the provisions of title four of the Revised Statutes, including all amendments thereto, are hereby made applicable to said department. The Director of Health shall be appointed by the President, by and with the advice and consent of the Senate, at a salary of $——— *per annum* and with tenure of office like that of the heads of the other executive departments. And said director shall cause a seal to be made for the Department of Health, of such device as the President approves, and judicial notice shall be taken of said seal.

SEC. 2. That there be in the Department of Health an assistant to the Director of Health, designated and known as the Commissioner of Health, who shall be a skilled sanitarian, appointed by the President, by and with the advice and consent of the Senate, who shall serve at the pleasure of the President, and who shall receive a salary of $——— *per annum*. The Commissioner of Health shall perform such duties as are required by law and such as are prescribed by the Director of Health. There shall be also a chief clerk, a disbursing clerk, and such other employees as Congress may from time to time authorize. The auditor for the state and other departments shall receive and examine all accounts of moneys paid in and of moneys expended on account of the Department of Health, and shall certify the balance arising thereon to the Division of Bookkeeping and Warrants of the Treasury Department, and forthwith send a copy of each such certificate to the Director of Health.

SEC. 3. That it be the province and duty of the Department of Health to foster and promote all matters pertaining to the conservation and improvement of the public health and to collect and disseminate information relating thereto: *Provided*, That this act shall not be construed as attempting to authorize the Department of Health to exercise or attempt to exercise, without express invitation from the chief executive or other proper authority of the state, any function belonging exclusively to such state, or to enter any premises in any state without the consent of the owner or occupant thereof; but the Director of Health, on request of the chief executive or other proper authority of any state, territory, the District of Columbia or any insular possession, may detail for limited periods an officer or officers, employee or employees, from the Department of Health to assist the health authorities of such state, territory, district or insular possession in protecting and promoting the health of the people of such jurisdiction: *And provided further*, That the Department of Health shall recognize no so-called school or system of medicine.

SEC. 4. That to the Department of Health are hereby transferred the following bureaus, divisions and other branches of the government, and all that pertains to them, and they and each of them shall remain under the supervision and direction of the Director of Health until otherwise directed by law, namely:

(a) From the Department of the Treasury is transferred the Public Health and Marine-Hospital Service.

(b) From the Department of Agriculture is transferred that part of the Bureau of Chemistry charged with the investigation of the adulteration of foods, drugs and liquors, and with the execution and enforcement of the act of Congress entitled "An act for preventing the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquors, and for regulating traffic therein, and for other purposes," approved June 30, 1906.

(c) From the Department of Commerce and Labor is transferred the Division of Vital Statistics, Bureau of the Census.

And the President is hereby authorized to transfer to the Department of Health at any time, either the whole or any part, as to him may seem best, of any bureau, division, or other branch of the government engaged in work pertaining to the public health, except the Medical Department of the Army and the Bureau of Medicine and Surgery of the Navy.

And each and every function, authority, power, duty and jurisdiction, of whatsoever character it may be, vested at the time of any transfer aforesaid in the head of the executive department from which such bureau, division or other branch of the government is transferred, shall, to the extent to which such function, authority, power, duty or jurisdiction pertains to such bureau, division or other branch of the government, immediately on such transfer become vested and thereafter remain vested in the Director of Health.

All land, buildings, furniture, apparatus, equipment and property of whatsoever description, and all official records and papers, in the custody of any executive department from which any bureau, division or other branch of the government is transferred as aforesaid and pertaining to the business of such transferred bureau, division or other branch of the government, shall at the time of such transfer, or as soon thereafter as practicable, and in so far as such action can be taken without hindering the work of the executive department from which such transfer is made, be given over into the custody of the Department of Health. And all unexpended balances of appropriations available at the time of such transfer for the use of any such transferred bureau, division or other branch of the government, or which may become available thereafter, shall be and remain available, in similar manner and to the same extent as if no transfer had been made.

SEC. 5. That within the Department of Health there shall be the following bureaus: (a) Bureau of Sanitary Research; (b) Bureau of Child Hygiene; (c) Bureau of Vital Statistics and Publications; (d) Bureau of Foods and Drugs; (e) Bureau of Quarantine; (f) Bureau of Sanitary Engineering; (g) Bureau of Government Hospitals; (h) Bureau of Personnel and Accounts. And the Director of Health is hereby authorized to arrange and rearrange from time to time, with the approval of the President, the functions, duties, personnel, papers, records and property, and the work, resources, and equipment generally, coming into the jurisdiction and control of the Department of Health by the operation of this act, so as most efficiently and economically to organize and maintain the several bureaus herein named and such divisions and offices thereof as to said director seems proper; but in arranging and rearranging the personnel, the rank, pay and allowances of the officers of the Public Health and Marine-Hospital Service commissioned at the time of the transfer of that service to the Department of Health shall not, by reason of anything in this act contained, be diminished. And the Director of Health may call on the heads of other executive departments for information in their possession whenever such information is needed for the efficient and economical working of the Department of Health.

SEC. 6. That the President is hereby authorized to detail officers and employees from any of the several executive departments of the government for duty under the Director of Health when so requested by said director, and to detail officers and employees in the service of the Department of Health to any of the other executive departments on request of the head of such department, provided such detail can be made without prejudice to the public service, to carry into effect the purpose and intent of this act; but officers and employees so detailed shall receive no additional compensation, but shall be paid such actual and necessary expenses as they incur in the discharge of their duties.

SEC. 7. That the Director of Health may, in his discretion and with the approval of the President, appoint an advisory board of not more than seven members, to confer with him on his request, from time to time as he deems necessary, concerning the work of the Department of Health and the health of the people. The members of said board shall be selected because of their special knowledge of matters relating to the public health, and each shall hold office for a term of seven years or until his successor is appointed except that the appointments first made, and appointments thereafter made to fill unexpired terms and terms of members who have held over beyond the periods of their original appointments, shall be made so that not more than one member shall retire during any one fiscal year. No member of any such advisory board shall receive any compensation for his services, but each shall be paid all actual expenses necessarily incurred in the discharge of his duties. And from and after the passage of this act the advisory board for the Hygienic Laboratory created by section five of an act entitled "An act to increase the efficiency and change the name of the United States Marine-Hospital Service," approved July 1, 1902, be, and the same hereby is, abolished.

SEC. 8. That the Director of Health may, whenever in his judgment public interests would be promoted by so doing, invite the duly constituted health authorities of all or of any of the states, territories, the District of Columbia and insular possessions as to him may seem advisable, each to send one delegate to confer with him or his duly appointed representative or representatives and with each other, at such time and place as he may designate, concerning any particular matter or matters relating to the public health; and it shall be the duty of the Director of Health, on the written application of the duly constituted health authorities of not less than five states, territories, the District of Columbia or insular possessions, stating the particular matter or matters which it is desired to consider, to appoint a time and place, and to call a conference of the health authorities of the states, territories, the District of Columbia and insular possessions that united in the request therefor, and personally or through his duly appointed representative or representatives to be present at such conference; but every state, territory, the District of Columbia and insular possession shall be notified of every conference, and if practicable be afforded an opportunity of being present and participating in its proceedings. And from and after the passage of this act annual and other conferences of state and territorial boards of health, quarantine authorities and state health officers, provided for by section seven of an act entitled "An act to increase the efficiency and change the name of the United States Public Health and Marine-Hospital Service," approved July 1, 1902, be, and the same are hereby, abolished.

SEC. 9. That, except as expressly provided in this act, nothing herein contained shall be construed as limiting or abrogating any function, right or duty imposed by law on any existing bureau, division or other branch of the government; but such bureaus, divisions and other branches of the government as are by this act or by authority thereof transferred to the Department of Health shall continue, under direction of the Director of Health, to have such functions, duties and rights as they have at the time of such transfer; and in the case of such bureaus, divisions and other agencies of the government as are transferred in part only, the part not transferred shall continue to have and to exercise all such functions, duties and rights, except such as specifically relate to the part transferred to the Department of Health, in the same manner and to the same extent as if no such transfer had been made.

SEC. 10. That the Director of Health shall annually submit to Congress a report in writing showing the operations of the Department of Health during the last preceding fiscal year, which report shall give an account of all moneys received and all moneys disbursed on account of such operations. He shall make such other reports from time to time as may be required by the President, or by either House of Congress, and such as are in his judgment necessary or expedient.

SEC. 11. That $——— be, and the same are hereby, appropriated to carry into effect the provisions of this act, out of any money in the Treasury not otherwise appropriated.

SEC. 12. That all acts and parts of acts contrary to the provisions of this act or inconsistent therewith be, and the same are hereby, repealed.

SEC. 13. That this act shall take effect on and after July 1, 1912.

Cystic Disease of the Breast with Carcinoma.—It is difficult to estimate the exact etiologic relation that the presence of a cyst bears to the formation of a carcinoma, but the association of the one with the other is sufficiently common to justify the routine removal of such cysts.—H. M. Rigby, in the *Practitioner*.

Deaths

Leartus Connor, M.D., one of the distinguished ophthalmologists of the middle west, a leader in medical education, and in the uplift of the medical profession, died at his home in Detroit, April 16, from cerebral hemorrhage, aged 68.

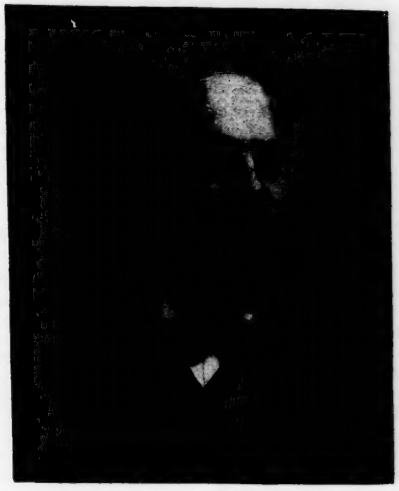
Dr. Connor was a native of Coldenham, N.Y., took his academic course at Williams College, and his medical course at the College of Physicians and Surgeons, New York City, from which he graduated in 1870. In 1871, he located in Detroit and at once began his work as a medical teacher as lecturer on chemistry in Detroit Medical College. From 1872 to 1879, he was professor of physiology and clinical medicine; from 1878 to 1881, professor of didactic and clinical ophthalmology and otology, and from 1875 to 1881, secretary of the college. In 1871, Dr. Connor became editor of the *Detroit Review of Medicine and Pharmacy* and continued as its editor through its various changes of name to the *Detroit Medical Journal*, *Detroit Lancet*, and *American Lancet*, his editorial work continuing until 1895.

He was an active and prominent member of the American Medical Association for many years, was second vice-president in 1882, a member of the original board of trustees appointed in the same year, a trustee in 1887-8, and again in 1892-3, and chairman of the Section on Ophthalmology in 1891. He was president of the Michigan State Medical Society in 1901-2, and chairman of its council from 1902 to 1905; president of the Detroit Academy of Medicine, 1877-8 and 1888-9, and its secretary 1871-2; secretary of the American Medical College Association; and president of the American Academy of Medicine and of the American Medical Editors' Association, 1883-4.

He was attending physician for several years to St. Mary's Hospital, ophthalmic and aural surgeon to Harper Hospital since 1881, and to the Detroit Children's Free Hospital since 1887, and was consulting ophthalmologist to the Woman's Hospital, from 1881 to 1890.

A testimonial dinner was given to Dr. Connor by his colleagues in Detroit, February 25, in honor of the completion of his fortieth year in practice.

Wayne County Medical Society at its regular meeting April 17, adopted resolutions of eulogy and sympathy, and adjourned without taking up the program for the evening. Funeral services were held April 18.



LEARTUS CONNOR, 1843-1911

In addition to his editorial work, Dr. Connor made many valuable contributions to the literature of ophthalmology. He was largely responsible for the activity displayed by various associations in the regulation of the teaching of ophthalmology in the colleges so that every practitioner would have the ability to refract correctly and render the rvice to his patients which the optometrist is trying to render. Dr. Connor was a loyal friend, and an enemy who always fought fairly; no one ever questioned his good faith. His precept and example were an inspiration to his younger confrères, and his death will be lamented, not only by them, but by his many friends throughout the United States.

Charles Augustus Oliver, an ophthalmologist of international repute, died at his home in Philadelphia, April 8, from uremia, aged 57. He was a native of Cincinnati, but went to Philadelphia when a child, pursued his medical studies at the University of Pennsylvania and was graduated from the medical department of that institution in 1876. He was a member of the American Medical Association, American Association for the Advancement of Science, American Philosophical Society, and American Ophthalmological Society, and was an active, honorary or corresponding member of many other medical and scientific societies in this country and abroad. He was attending surgeon to the Wills Eye Hospital, ophthalmologist to the Presbyterian Hospital, and consulting ophthalmologist to the Friends' Hospital for the Insane and the State Hospital for the Chronic Insane. He was a prolific writer on his specialty, co-author with Dr. Norris of the "Textbook of Ophthalmology," and author of several books and monographs on ophthalmology. He was a fellow of the Philadelphia College of Physicians and founder of the Wills Eye Hospital Ophthalmic Society. He was made associate clinical professor of ophthalmology in the Woman's Medical College of Pennsylvania, Philadelphia, in 1897, and later on was made clinical professor in that institution. Dr. Oliver had suffered from nephritis about three years.

Albert Rufus Baker, M.D. Western Reserve University, Cleveland, 1879; a member of the American Medical Association, and chairman of the Section on Ophthalmology in 1893-4; professor of ophthalmology, otology and laryngology since 1888 in the Cleveland College of Physicians and Surgeons, and chairman of the faculty from 1898 to 1902; oculist and aurist to St. Alexis and Cleveland General Hospitals; expert on the local board of U. S. Pension Examining Surgeons; president of the Association of American Medical Colleges in 1900-01 and of the Cuyahoga County Medical Society; a fellow of the American Academy of Medicine; editor of the *Cleveland Medical Gazette* from 1885 to 1896; died at his home in Cleveland, April 5, aged 53.

John H. Janeway, M.D. University of Pennsylvania, Philadelphia, 1852; Colonel Medical Corps, U. S. Army, retired, died in the Kenilworth, (Ill.) Sanitarium, April 14, from paralysis, aged 82. Dr. Janeway entered the Medical Corps of the Army in 1861, and served throughout the Civil War, being brevetted major and lieutenant colonel for gallantry. He was retired with the rank of lieutenant colonel on account of age, August 12, 1893, and afterward made his home with his son in Chicago and Kenilworth. He had been disabled for several years on account of cerebral hemorrhage.

Thomas B. Hart, M.D. College of Physicians and Surgeons, Chicago, 1894; a member of the American Medical Association; formerly a practitioner of Mount Etna, Ind.; medical superintendent of the New Mexico Miners' Hospital; president of the New Mexico Medical Association; vice-president of the New Mexico Board of Health; health officer of Colfax County; city physician of Raton, assistant local surgeon of the Santa Fe System; and president of the local board of pension examiners; died at his home in Raton, April 5, aged 46.

Chester West Stranahan, M.D. University of Buffalo, N. Y., 1863; Jefferson Medical College, 1867; formerly a member of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; surgeon in charge of St. Vincent's Hospital, Warren, from 1892 to 1902; local surgeon of the Lake Shore and Michigan Southern Railway Company; died at his home in Erie, April 6, from paralysis, following a cerebral hemorrhage four years before; aged 65.

Byron Frank Porter, M.D. Medical School of Maine, Brunswick, 1850; a member of the Maine Medical Association; in 1885 and 1886, a member of the Maine legislature; for fifteen years supervisor of schools, and for many years United States pension examiner; said to have been the oldest practitioner in the state; died at his home in Newport, April 6, from senile debility, aged 82.

Noah M. Glatfelter, M.D. University of Pennsylvania, Philadelphia, 1864; for three years a surgeon of volunteers during the Civil War; well known as a horticulturist and botanist and a recognized authority on willow culture and the culture of mushrooms; died at his home in St. Louis, April 2, from the results of injuries received in a fall two days before, aged 73.

Charles Hadley Spinning (license, Washington, 1881); a graduate of the Eclectic Medical Institute, Cincinnati, in the late forties; twice a member of the Washington state legislature, and once state senator; for nine years physician to the Puyallup Indian Agency; for many years a practitioner of Tacoma; died at his old home in Prosser, April 1, aged 90.

Theodore A. Wagner, M.D. Indiana Medical College, Indianapolis, 1876; a member of the Indiana State Medical Association; a member of the consulting staff of the Indianapolis City

Hospital; once coroner of Marion County, and chairman of the mayor's advisory committee; died in St. Vincent's Hospital, Indianapolis, April 9, from cerebral hemorrhage, aged 62.

Alexander Arthur McLarty, M.D. Detroit College of Medicine, 1893; of Manistee; a member of the Michigan State Medical Society; supreme examiner of the Modern Romans; acting assistant surgeon U. S. P. H. and M.-H. Service; died at St. Mary's Hospital, Rochester, Minn., March 27, after an operation for carcinoma of the stomach, aged 43.

Frank D. Putnam, M.D. Bellevue Hospital Medical College, 1875; a member of the American Medical Association; formerly president of the Cayuga County Medical Society; city physician of Auburn, N. Y.; died in the Auburn City Hospital, April 5, two days after an operation for the removal of gallstones, aged 59.

Richard W. Ivers, M.D. Baltimore (Md.) Medical College, 1895; a member of the Connecticut State Medical Society; for several years a member of the staff of the Emergency Hospital, Bridgeport, Conn.; for three years chief surgeon of the Barnum and Bailey circus; died at his home in Middletown, Conn., April 2, aged 40.

John Ligon, M.D. University of Virginia, Charlottesville, 1868; surgeon of the Nineteenth Virginia Cavalry, C. S. A., during the Civil War; for many years a member and president of the Pocahontas County (W. Va.) Court; died at his home in Clover Lick, April 3, from cerebral hemorrhage, aged 77.

Ethan P. Allen, M.D. Rush Medical College, 1866; a veteran of the Civil War; for more than twenty years a practitioner of Stillman Valley, Ill., but later of Rockford; physician of Winnebago County; died at the Ransom Sanitarium in that city, April 6, from cerebral hemorrhage, aged 70.

George A. Doss, M.D. Georgia College of Eclectic Medicine and Surgery, Atlanta, 1901; president of the state eclectic association in 1908; professor of specific medication and diagnosis in the Hospital Medical College (Eclectic) Atlanta; died in a sanitarium in that city, April 2, aged 34.

Henry Clay Perry, M.D. Rush Medical College, 1857; acting assistant surgeon in the Army during the Civil War; and thereafter a resident of Ord, Neb.; several times mayor, and for many years supervisor of the city; died in San Diego, Cal., February 2, from heart disease, aged 77.

Caroline M. Stengel, M.D. Woman's Medical College of the New York Infirmary for Women and Children, New York City, 1893; of Santa Clara, N. Y.; a member of the Woman's Medical Association of New York City; died in Hoboken, N. J., Oct. 23, 1910, from tuberculosis.

Henry E. Cassel, M.D. University of Minnesota, Minneapolis, 1884; a member of the American Medical Association; director and chief surgeon of the Litchfield (Minn.) Hospital; died in Luther Hospital, St. Paul, April 4, from septicemia, due to an operation wound, aged 51.

Alexander Werth, M.D. University of Berlin, Germany, 1860; a veteran of the Civil War; and afterward United States pension examiner in St. Louis; died at his home in that city, April 7, from septicemia, following an amputation of the leg above the knee, aged 70.

Albertus Adair Moore, M.D. New York University, New York City, 1859; a member of the South Carolina Medical Association; and formerly a member of the State Board of Health; died at his home in Camden, Nov. 26, 1910, from arteriosclerosis, aged 76.

William C. Mason, M.D. Howard University, Washington, D. C., 1884; formerly of Indianapolis; for thirty years a medical examiner of the Pension Office, Washington, D. C.; a veteran of the Civil War; died at his home in Washington, March 28, aged 65.

William Henry DeCourcy, M.D. New York, 183—; of Chestonon-the-Wye, Queen Anne's County, Md.; who gave up practice after a short time to look after his estate in Maryland; died at Johns Hopkins Hospital, Baltimore, April 5, from senile debility, aged 87.

John David Carnahan, M.D. University of Virginia, Charlottesville, 1872; a member of the Medical Society of Virginia; a pioneer practitioner of Ogden, Utah; and a Confederate veteran; died at his home in Ogden, April 2, from septicemia, aged 63.

Robert A. Walker, M.D. College of Physicians and Surgeons, Paltimore, 1882; a member of the Medical Society of the State of Pennsylvania; of Rockville; died at the home of his sister in Wilkinsburg, March 29, from cancer of the intestines, aged 54.

Charles Foster Gardner, M.D. Syracuse (N. Y.) University, 1898; of Westhampton Beach; a member of the Medical Society of the State of New York; died in Roosevelt Hospital, Manhattan, March 31, after an operation, from septicemia, aged 38.

John F. Hutchins, M.D. Texas Medical College, Galveston, 1868; Tulane University, New Orleans, 1868; a member of the American Medical Association, and a Confederate veteran; died at his home in Oakland, Tex., Dec. 5, 1910, aged 69.

Richard Kuehne, Jr., M.D. Long Island College Hospital, Brooklyn, N. Y., 1904; of West Hoboken; a member of the Medical Society of New Jersey; died in Nassau, Bahama Islands, June 16, 1910, from chronic nephritis, aged 27.

George S. Luck, M.D. Washington University, Baltimore, 1873; a Confederate veteran, and a member of the Roanoke (Va.) Academy of Medicine; died at his home in that city, March 19, from cerebral hemorrhage, aged 64.

Herman T. Wolff, M.D. University of Halle, Germany, 1878; of San Antonio, Tex.; died in Baylor Hospital in that city, April 1, from the effect of morphin, self-administered, it is believed with suicidal intent, aged 59.

Russell J. Dimon, M.D. Albany (N. Y.) Medical College, 1883; formerly a member of the Medical Society of the State of New York; of Hastings; died at the Hospital of the Good Shepard, Syracuse, March 28, aged 58.

Isaac Franklin Noel, M.D. American Medical College, Eclectic, St. Louis, 1881; a member of the Missouri State Medical Association; died suddenly in his office in Unionville, April 4, from cerebral hemorrhage, aged 53.

Mahlon Kohler Mathus, M.D. Missouri Medical College, St. Louis, 1855; a resident of Sangamon County Ill., for sixty-five years; died at his home in Williamsville, March 22, from cerebral hemorrhage, aged 86.

Agnes Christy Patterson, M.D. Boston University School of Medicine, 1900; of Malden, Mass.; died in the Massachusetts Homeopathic Hospital, Boston, March 20, after an operation for gastric ulcer, aged 48.

Ranny Phelps Malay, M.D. University of Alabama, Mobile, 1884; a member of the South Dakota State Medical Association; died at his home in Aberdeen, April 4, from pneumonia, aged 51.

Emile Laurent Marie Tilley, M.D. University of Tennessee, Nashville, 1886; of Kaplan, La.; died in St. Mary's Hospital, Patterson, La., Dec. 21, 1910, from carcinoma of the stomach, aged 49.

Jacob Rohrer Johns, M.D. Jefferson Medical College, 1889; for many years a practitioner of Chadd's Ford, Pa.; died at his home in Philadelphia, April 6, from locomotor ataxia, aged 49.

Jared E. Brooke, M.D. Indiana Central Medical College, Greencastle, 1851; a surgeon of volunteers during the Civil War; died at his home in Plymouth, Ind., March 31, aged 91.

James M. Brittain, M.D. Missouri Medical College, St. Louis, 1873; a Confederate veteran; and a pioneer citizen of Jacksonville, Tex.; died at his home in that place, April 2, aged 80.

Louis A. McCord, M.D. St. Louis College of Physicians and Surgeons, 1892; of Cristoval, Tex.; was shot and killed in San Angelo, Tex., in a feud fight, March 31, aged 45.

Simon M. Brainin, M.D. University of Dorpat, Russia, 1881; a member of the Medical Society of the State of New York; died at his home in New York City, March 31, from chronic nephritis, aged 56.

John Washington Steel, M.D. Eclectic Medical Institute, Cincinnati, 1857; died at his home in Shelbyville, Tenn., February 7, from cirrhosis of the liver, aged 80.

Albert Badger, M.D. New Orleans, 184—; for nearly seventy years a practitioner of Missouri; died at his home in Schell City, March 14, from senile debility, aged 89.

Lafayette Washington Herrington, M.D. Kentucky School of Medicine, Louisville, 1893; died at his home in Rawson, O., Dec. 29, 1910, from pneumonia, aged 75.

Warren W. Bowles (license, Kansas, 1901); for thirty-five years a practitioner of Bunker Hill; was killed in a runaway accident near Luray, April 5, aged 71.

James Cress, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1862; died at his home in North Georgetown, O., April 2, from pneumonia, aged 80.

Joseph Smillie, M.D. University of Toronto, Ont., 1901; died at his home in Binbrooke, Ont., July 30, 1910, from cystic tumor of the cerebellum, aged 37.

Aubry Linton Mahon, M.D. College of Physicians and Surgeons, Memphis, Tenn., 1909; died at his home in Gould, Ark., March 30, from nephritis, aged 26.

Charles Oliver Sumner, M.D. Kansas City (Mo.) Medical College, 1885; died at his home in Alma, Colo., January 19, from pleuropneumonia, aged 53.

Hiram W. Harding, M.D. University of Maryland, Baltimore, 1860; a Confederate veteran; died at his home at Wicomico Church, Va., March 24, aged 73.

Claude Fowler Hickman, M.D. Chattanooga (Tenn.) Medical College, 1908; died at his home in Bristol, Va., April 7, from tuberculosis, aged 26.

Marriages

BEN PARMENTER, M.D., to Miss Ethel Brumfield, both of Bellmont, Ill., April 1.

WILLIAM K. CHATTLE, M.D., to Miss Eva Mae Haus, both of St. Louis, March 4.

CARL WILLIAM WAHRER, M.D., to Miss Julia McConn, both of Fort Madison, Ia., April 8.

FRANK R. SPENCER, M.D., Boulder, Colo., to Miss Edith Clayton of Kankakee, Ill., April 5.

STANLEY E. KERRICK, M.D., to Miss Winifred Thompson, both of Minneapolis, April 18.

SCOTT DUDLEY BRECKINRIDGE, M.D., to Miss Gertrude Ashby Bayne of Washington, D. C., April 19.

PHILIP F. HEROD, M.D., Alva, Okla., to Miss Ruby Kelley of Kansas City, Mo., at El Reno, Okla., March 31.

WILLIAM G. PRUYN, M.D., Mexico City, Mex., to Miss Bessie Rea of San Francisco, at Mexico City, March 30.

Conservative Surgery of Trees.—Trees, like human beings, may have their lives and usefulness extended by intelligent medical treatment or by conservative surgery; indeed, the analogy, when one comes to think about it, is striking. In addition to conditions which must be treated surgically, they are subject to various diseases, due mostly to insect parasites. When these parasites attack leaves or bark, the trees may be said to be treated medically, as in the use of sprays for the eradication of scale or other insects. Trees are also affected by under-nourishment and are subject to traumatisms and decay. In their capacity of furnishing wholesome foods, in their chemical activity in utilizing carbonic acid gas and giving off oxygen, in affording protection from the heat of the sun, as well as by appealing to our esthetic sense, trees have a distinct influence on the health and happiness of the people. They are therefore worthy of care. In treating pathologic conditions in trees many principles apply that are applicable to treatment of human beings. In the case of infesting parasites, parasiticides and disinfectants are used. In the conditions requiring surgery, which constitute perhaps the larger proportion of tree ills, almost the same surgical principles apply. A broken limb may be put in splints, a limb torn or broken off may be bandaged with protective material to exclude decay. Transplantation of twigs or branches may be done, as in grafting or budding, and more formidable injuries or large areas of decay may be healed by still more radical surgery. The tree surgeon must understand thoroughly tree anatomy and tree nature, and must take into consideration the mechanical effect of winds, etc. When large areas of decay are present in limb or trunk, this decay must be thoroughly eradicated, just as the dentist or the surgeon cleans out carious teeth or bone; a species of asepsis or antisepsis must be observed to kill off the factors causing decay, and then the cavities must be filled with some material impervious to moisture and which will support a possibly greatly weakened trunk or limb. As a filling material, cement, along with its other numerous uses, has been found to be one of the best. A tree thus carefully treated, either medically or surgically, responds marvelously, and its life may be saved and its existence greatly extended. Considerable cavities thus filled with cement often heal and are even covered over with bark, leaving only a scar, just as surface wounds in animal life are covered with protecting epithelium.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

EIGHTEENTH CENTURY MATERIA MEDICA

The changes that have taken place in medical thought and practice within the last two hundred years are nowhere more evident than in that branch of medicine dealing with therapeutic agents—materia medica. It is both interesting and instructive to compare the present status of certain drugs which we now recognize as some of the most useful in the physician's armamentarium, with the standing of the same medicaments two hundred years ago.

Herman Boerhaave, a Dutch physician, born in 1668, stood, in his day, in the vanguard of the medical profession. In 1709, he became professor of medicine and botany at the University of Leyden, having previously held the position of lecturer on the theory of medicine in the same institution. It is said that Boerhaave's reputation was so high that, at one time, he received a letter from a Chinese mandarin addressed: "To Boerhaave, Physician in Europe."

It may be fairly admitted that Boerhaave's statements on the drugs in use in his day are representative of his time. For this reason the following quotations take on an added interest. In 1775 a small book was published by one Richard Goade, a London druggist, entitled "Boerhaave's Materia Medica, or the Druggist's Guide, and the Physician and Apothecary's Table-Book." Goade says, in his preface, that his book is but "a Translation of a Latin Manuscript which was given to me by Dr. James Carroll, taken from the Mouth of the great Professor Boerhaave, in a Course of Lectures."

The few quotations which are here given have been selected chiefly because of the comparative importance of the drugs and partly because of the change that has taken place in the medical profession's estimate of their medicinal value. Except that the modern form of the letter "s" has been substituted for that which appears in Goade's work, the composition and spelling have been closely followed:

ARGENTUM. *Silver.* A Metal well known in common Use, but little in Medicine. It is found pure and native in the Earth in some Places; in others mixed with the Ores of Lead, and other mineral Substances; beaten into Leaves, it is used to cover Boluses. The Preparations from it are the Chrystals made by setting a strong Solution of it to chrystalize; and the Lunar Caustic made from an evaporated Solution of the same Metal, or from the melted Chrystals. Both are Caustics but they are little used.

A Solution of Silver in Aqua Fortis, stains Agate: The Figures made by Art in those Stones are done by covering the Surface with Wax, cutting the intended Figure through the Wax, and pouring on the Solution, which penetrates into the Stone.

ARGENTUM VIVUM. *Quicksilver.* A fluid Semi-Metal, found sometimes native and pure, oftener in Form of Cinnabar or other Ores. Factitious Cinnabar is an artificial Mixture of Sulphur and Quicksilver; Native Cinnabar is a natural Mixture of the same Ingredients. We have it from Spain, Hungary, and the East, and also the Quicksilver Native or obtained from it.

Taken in its crude or native State is excellent against Obstructions, an Ounce or two for a Dose: Large Quantities are sometimes given in obstinate Obstructions of the Bowels, but it is a desperate Practice. Externally mixed into Ointments it cures the Itch, and other cutaneous Foulnesses; and will raise Salivation.

The Preparations of it kept in the Shops, are numerous and of great Virtue. Factitious Cinnabar, made by subliming Quicksilver and Sulphur. Æthiops Mineral, by grinding Quicksilver and Sulphur together. Corrosive Sublimate, made by subliming Quicksilver Nitre, Vitriol, and Sea-salt. Mercurius Dulcis or Calomel, made by subliming several Times Crude Mercury and Corrosive Sublimate. Calcined Mercury, made by keeping

Quicksilver over a small Fire till it becomes a reddish Powder. White Precipitate, made by dissolving Corrosive Sublimate and Sal Ammoniac in Water, and precipitating with Oil of Tartar. What is called Red Precipitate, made by evaporating a Solution of Quicksilver in Aqua Fortis: And Turpeth Minerale, made by evaporating a Solution of Quicksilver in Oil of Vitriol, and pouring on Water. All these are powerful Medicines, but they must be given with Caution.

Crude Quicksilver for internal Use should be reduced from Cinnabar: and Sophistications are so common, every one ought to do it for himself.

ARSENICUM. *Arsenick.* A Chemical Preparation made in Germany, and kept by our Druggists. It is properly the Flowers of Cobalt, a poisonous Mineral found in many Parts of Europe, and affording also the fine blue Substance called Smalt. The Cobalt is burnt in a reverberatory Furnace, and the Flowers or Soot collected from its long Chimney, make Arsenic. From the Remainder of the Cobalt, Smalt is made, by adding Sand and Pot-ash, and running all into a Kind of Glass of a deep Blue.

The Soot of the Cobalt sublimed alone, makes the common White Arsenick; Yellow Arsenick is made by adding Sulphur to the Soot before Sublimation, and the Red by adding Sulphur and the Scoriae of Copper.

They are all Poisons, and of no Use whatsoever in Medicine: The Deaths that have been occasioned by them, should incur a severe Penalty on whosoever sold or kept them.

DIGITALIS. *Fox-Glove.* A wild Herb brought entire to the Markets. It is a Yard high, and has large red Flowers.

The fresh Leaves given in Infusion, are a rough Vomit, but it is not used except by the Country People.

An Ointment made of the Flowers boiled in Lard, has been supposed to have great Virtues against Piles: but it is not in much Esteem at present, except amongst the good Women.

GENTIANÆ RADIX. *Gentian Root.* A Long, thick Root of a yellowish brown Colour, with little Smell, but very bitter to the Taste. We have it from Germany, where they dry some in the open Air and some in Ovens. The latter Kind is worst, 'tis too dry, brittle, and often burnt. The Plant which produces it is common in our Gardens, and has large broad Leaves and little blue Flowers.

It is an excellent Stomachick, with Orange Peel and a little Galangal it makes an excellent bitter Infusion in Wine or Water.

IPECACUANHA. *Indian Root.* Two Kinds of Ipecacuanha are imported, a brown and a grey; but as the grey is the Kind that ought to be used, 'tis Pity the other is brought over. Both are from the Spanish West-Indies. The grey or right Ipecacuanha is long slender, twisted and annulated; greyish on the Surface, and paler within; the Brown is smaller; it is of a deep brown on the Surface, and white within. The grey has not much Smell, this has less; the Taste of both is disagreeable. The Plant to which we owe the one, affords also the other: the only Difference is, that the brown is starved, the grey grows in a rich Soil. The Plant is ten Inches high, and has a few Leaves at the Top only, the Flowers are white, and are succeeded by Berries.

The Root is the best Emetick we know, and is almost the only Medicine used at this Time for that purpose. It has also a great Astringency, and taken for a Length of Time in small Doses, cures Dysenteries.

NUX VOMICA. *The Vomic Nut.* A rounded flat Fruit of the Breadth of a Shilling, striated, tough and of a whitish Colour, and of an horribly acrid bitterish Taste. We have it from the East-Indies. The Tree which produces it is large and beautiful. Its Fruit is of the Bigness, Shape and Colour of an Orange, and in each there are about fifteen Kernels, which are these Nuces Vomicæ.

They are used as a Poison for Animals. They have been recommended however, in small Doses internally as a Medicine, but we have seen ill Consequences attend them, and we have so many safe Medicines for the same Purposes, that it is rash to use them.

SABINA. *Savin.* The young Branches with the Leaves of the Garden Shrub of this Name, brought fresh to Market. The Leaves are little, of a bright Green, and terminates in Prickles.

It is famous for a Promoter of the Menses and it will cause Abortion; but great Danger as well as Guilt attends the Use of it to such Purposes: Many have perished by it.

SARSAPARILLÆ RADIX. *Sarsaparilla Root.* A Root brought over in long slender Pieces, which are usually split, and have the inner Part taken out, before they are sold for Use. When entire, the Root consists of a Head of the Bigness of a Walnut, from whence these Strings or Fibres grow in great Numbers, and to a great Length, but the Fibres only are used, They are of a greyish Colour on the Outside, and white within, of no Smell, and but little Taste. We have it from South America. The Plant is one of the prickly Bindweeds.

It is esteemed a great Sweetener of the Blood, a Sudorifick and Attenuant. It was once pretended to be a remedy for the Pox.

SENA. *Sena.* The Leaves of a small Shrub, but so carelessly collected, that we find Fragments of the Stalks and the Seed-Vessels among them. They are oblong, sharp-pointed, of a pale Green, fleshy, of little Smell, but of a Mawkish, unpleasant Taste. This is the Alexandrian Sena, the only Kind that should be kept. There are two other Kinds, one from Tripoly, with greener and blunter Leaves; another from Mocha, the Leaves of which are long and narrow. They have all the same Virtues, but the Alexandrian is greatly to be preferred. The Leaves are alated, and the Flowers are like Pea-Blossoms, but yellow streaked with purple.

Sena is an excellent gentle Purge: There have been many Ways invented to disguise its Taste, but none is so well as the old Womens Method of stewing it with Prunes, which also assist it in its Operation.

TOLUTANUM BALSAMUM. *Balsam of Tolu.* A Resin of the Consistence of thick Honey, of a brownish Colour, of a very fragrant Smell, and of an acrid Aromatick Taste. We have it from New Spain, in Shells of Gourds. It is thin when first put up, but thickens in keeping. The Tree which affords it, is a small Pine, frequent in South America.

It is an excellent Balsam in Consumption; for it is less acrid than any of the others; it has also their Virtues of a Detergent and Diuretick.

State Laws Against Drug Adulteration

The federal authorities, since the passage of the National Food and Drugs Act, have done much to improve the quality of drugs on the market. This law, however, being a federal one, applies only to goods shipped from one state to another, and spurious or adulterated drugs may be manufactured in a state and shipped to, and exposed for sale in, all parts of that state and yet be entirely without the province of the federal authorities. Such adulteration is entirely a matter for the state authorities to correct. Unfortunately, the individual states, as a rule, have not had efficient laws or the laws have been a dead letter. Conditions are changing, however, and such states as North Dakota, Massachusetts, Pennsylvania, New York and a few others are giving evidence that efforts are being made to check the traffic in adulterated drugs. We have before us a circular which indicates that Kentucky is one of the states that not only has a law for the regulation of the sale of medicines but is seriously concerned with its enforcement. The circular shows that Kentucky is concerned not only with the prosecution of offenders against the law but also takes the broader view and proposes also to combat the evil by educational methods. Thus it says:

> Two years' work under the Kentucky Food and Drugs Act has convinced those engaged in the enforcement of the drug sections of that act that there are two classes of adulterations: first, adulterations due to willful intent or gross carelessness; second, adulterations due to various trade and professional problems, which this office believes can be better overcome through mutual assistance rather than prosecution.

For the seminar the following comprehensive program is proposed:

> (*a*) The general application of the state and federal pure-food laws for the drug business. (*b*) The drug regulations and notices of judgment under the federal law. (*c*) The regulations under the state law. (*d*) The proper labeling of patent and proprietary medicines under the law. (*e*) The proper labeling of U. S. P. and National Formulary products under the law. (*f*) Necessary equipment for a druggist's laboratory. (*g*) Drug store management and equipment. (*h*) Problems connected with the preparation, storage and handling of various pharmaceutical preparations. (*i*) Standard weights and measures. (*j*) The soda fountain. (*k*) Other similar subjects.

It is to be hoped that the pharmacists of Kentucky will avail themselves of the opportunity thus offered.

Correspondence

A Case of Near Blackmail

To the Editor:—It is seldom that the publisher of one of the popular magazines comes as near placing himself in the position of being accused of blackmail, as did the publisher of *Good Housekeeping* in its February number. Beneath the heading of the article, "Why Our Glasses Don't Fit," appears a statement which at once leads the reader to suspect that the editor had some misgivings as to the advisability of publishing the article. He must have succeeded in getting the "endorsement of two distinguished oculists" for he says so; and obtaining the distinguished endorsements, he proceeds to publish the article which consists of an assumed case of eye-strain, and the trials and tribulations of a patient—the author—and of an oculist, who with the patience of a Job, as the history relates, makes twenty odd separate and distinct examinations and prescribings of faulty lenses, at which juncture the oculist discovers his trial lenses, and incidentally nearly all other trial lenses in this country and Canada, to be faulty; and all because neither he, nor his brother oculists, as well as various opticians, manufacturing and otherwise, are testing out their trial cases and prescribed lenses by a certain apparatus which "costs sixty dollars"—"possessed by not over fifty opticians and oculists out of 28,000 in the country!" And hereby hangs a tale.

The manufacturer must needs make some sales. The apparatus is not selling well, at least the author makes that inference very strong in the article. Probably he needs the money, and hence this advice to the public: "You can make your oculist a better one by asking him some questions which will worry him. 'Have you yourself tested your trial lenses?' 'Have you a modern axis finder to enable you to test them? And to test also the centering of these lenses I have bought from the optician? Are you sure the man you are sending me to has a machine? If he hasn't why don't you make him get one?'" And now, the manufacturer having had the benefit of this most excellent advertisement, published in the body of a popular magazine, in the form of a most readable and interesting article—and it is interesting—follows up the advertisement by sending out broadcast over the country reprints of the same. "From *Good Housekeeping* Magazine by Permission" accompanied by a picture of the apparatus, and a letter stating among other things, that this is "The Instrument to which Prof. Tassin"—the author of the article—"alludes."

W. H. DUDLEY, Los Angeles, Cal.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

STING OF THE PORTUGUESE MAN-OF-WAR

To the Editor:—Please give me any information you can in regard to the treatment of stings by the Portuguese man-of-war fish. I have had a number of cases on this coast, but have not been able to give much relief. R. S. LOWRY, Fort Lauderdale, Fla.

ANSWER.—Apparently a confusion has arisen between the Portuguese man-of-war fish (*Nomeus gronovii*) and the Portuguese man-of-war (*Physalia pelagica, Physalis pellagica, Holothuria physalis*).

The Portuguese man-of-war fish is closely related to the sergeant fishes. It is of small size and inhabits tropical parts of the Atlantic and Indian oceans. Our species lives commonly under the protection of the Portuguese man-of-war, swimming freely among its poisonous tentacles.

The Portuguese man-of-war is one of the so-called jelly-fish belonging to the *Siphonophora*. It floats on the surface of the water and has long retractile tentacles, sometimes several feet in length, and containing batteries of stinging capsules, powerful enough to sting the hand as severely as a nettle. The greater the number of the cells which sting an individual, the more severe is the pain. A poison has been isolated from *Physalia* by Portier and Richet (1902) under the name of "hypnotoxin." Solutions of this substance killed experimental animals; they became somnolent and death followed through paralysis of the respiration. The intensity of the effects are supposed to depend also on the size of the animal. After removal from water, the stinging property diminishes, but it is reported that the irritative property, unattended, however, by any of the constitutional effects, remains in the tentacles for a long time. Bennett (1831) even reports that in touching a handkerchief some weeks after it had been used in wiping off some of the portions of the tentacles the stinging property was found to have remained, although it had lost its virulent quality, which produced on fresh application violent constitutional symptoms.

Portuguese man-of-war stings are so rarely observed by the average American physician that the following personal experimental experience published by Bennett will doubtless be of interest: "On taking hold of the animal, it raised its tentaculæ and stung me on the second and ring fingers. The sensation was similar at first to that produced by the nettle; but before a few minutes had elapsed, a violent aching pain succeeded, affecting more severely the joints of the fingers, the stinging sensation at the same time continuing at the part first touched. On cold water being applied, with the intention of removing or lessening the pain, it was found rather to increase than to diminish the painful effects. The irritation resulting from the poisonous fluid emitted by the animal extended upward, increasing in extent and severity (apparently acting along the course of the nerves), and in the space of a quarter of an hour the pain in the forearm (which was more particularly referable to the inner part) was very violent, and at the elbow-joint it was still more so. It may be worthy of remark that when the joints became affected the pain always increased. The pain became at last almost unbearable, and was much increased on the affected arm being moved; the pulse of that arm was also much accelerated, and an unnatural heat was felt over its whole surface. The pain extended to the shoulder-joint; and on the pectoral muscle becoming attacked by the same painful sensation, an oppression of breathing was occasioned, which we find produced in a similar manner by rheumatism, when it attacks that muscle; and it proved very distressing during the time it remained. The continuance of the pain was very severe for nearly half an hour, after which it gradually abated, but the after-effects were felt during the remainder of the day in a slight degree of numbness and increased temperature of the arm. . . . About two hours after I had been stung, I perceived that a vesicle had arisen on the spot; and when children have been stung, I have observed that numerous small vesicles arose, similar to those produced by the nettle."

Dr. Clarke Abel describes his own symptoms, mentioning especially "the aching pain in the armpit, accompanied by a sense of restriction within my chest; within fifteen minutes all uneasiness ceased."

It has been very difficult to trace much recent literature of more than very general statements on this subject, and in the articles consulted there is considerable contradiction.

According to popular belief, the sting of *Physalia* may be very dangerous, even resulting in death of a person or of animals, and if certain animals eat *Physalia* their flesh is alleged to become poisonous. These views find both acceptance and denial in medical and scientific writings, and it is difficult to escape the thought that the entire subject of *Siphonophora* stings might well be restudied with profit. Some points of confusion existing in the literature may possibly be traceable to the fact that doubts exist as to the correct zoologic determination of the animal which has produced serious results in certain cases. That the stings of some jelly-fish are insignificant and wear off promptly, so that no medical treatment is necessary, may be readily admitted, but that "no remedy except patience" is called for we are scarcely prepared to admit for those instances in which very severe pain and various other symptoms develop.

Just what treatment would be best we are unprepared to say, for the subject has not been sufficiently studied, and with the exception of Old's (1908) paper, little of a satisfactory nature exists in literature bearing particularly on this phase of the subject. That morphin can be used to relieve the pain is evident, and on general grounds one would be inclined to suggest local alkaline applications as used by Old, provided the case was seen immediately.

One of the most important papers on jelly-fish stings was recently published by Assistant Surgeon E. H. H. Old, U. S. Navy. It is based on nine cases (one fatal) recently observed in the Philippines. The symptoms appeared in from ten minutes to an hour. In four cases there were marked hysterical symptoms, with incessant cough, restlessness, pain and nausea, while in four cases the marked hysterical condition was not present. In treatment, Old used alkaline solution locally and morphin sulphate hypodermatic-

ally. The following may be quoted as an example of the cases Old observed:

"V., a hospital attendant at Canacao, on June 21, 1907, while in bathing off the hospital wharf, was stung by a jelly-fish. He said that he was some distance from the landing and as soon as he felt the sting he turned back to the wharf. On his way he felt some pain across his back, but thought it was due to swimming. On his way up from the wharf to the hospital he began to feel badly and sat down for a little while. When he reached the hospital, about thirty minutes after he had been stung, he became prostrated and had to be carried to a bed.

"On arrival I found a slightly raised, vesiculated, red area over the left biceps muscle. This 'wept' like an eczema. The patient was throwing himself around the bed and coughing almost incessantly, expectorating a thin mucus. He complained of nausea but did not vomit. His face was congested and anxious. He wept at intervals, a stream of tears flowing down his face. The nose was occluded as in a bad case of coryza and from it a thin mucus was discharging. He complained of pain in his head and of marked pain in the lumbar region. He expressed much anxiety as to his condition and exclaimed now and then: 'I don't know why, but I've lost all my nerve.' His temperature was 38 C. (100.2 F.); pulse 100, strong and full. The examination of urine and blood showed nothing abnormal.

"Morphin sulphate 1/6 grain was given by hypodermic injection, an alkaline solution was applied to the arm. The symptoms subsided shortly after and in a few hours the temperature was normal and the pulse 60. The next morning the patient felt weak and complained of a slight sore throat; the pharynx was slightly inflamed."

In the foregoing we have used many words in failing to give a direct answer to our correspondent's question, but if this lengthy confession of relative ignorance will lead to a careful study of the subject our time (about three entire days of one man) used in looking into the literature (both medical and zoologic) in the hope of finding something satisfactory, will have been well spent. Possibly some of our readers are more fortunate than we have been and can give more definite information than we have been able to trace.

In conclusion it may be mentioned that divers, subc as sponge-fishers, are subject to an affection due to contact with celenterates. Smearing the body with fat is said to be a satisfactory preventive measure against this trouble.

WHAT KIND OF INFECTION?—PROBABLY ANTHRAX

To the Editor:—W. H., aged 17, male, coal miner and farmer, squeezed a blackhead and it developed into a small pimple surmounted by a crust. The patient scratched this crust off with his finger-nail. In less than twenty-four hours the lip and cheek began to swell, and in thirty-six hours the swelling was unusually large. At this stage I found him with a temperature of 102 F., pulse 98, very little pain, in fact, more discomfort than pain; he was unable to be up. There was no redness, no pustule.

I thought of erysipelas, actinomycosis, poison ivy. There were no horses nor cattle he could think of having been near, nor was there any poison ivy. I applied a lotion of saturated solution of boracic acid and alcohol, and gave a cathartic and a few powders. In twelve hours more the swelling became much worse; in fact, terrific; there was no heat or pronounced redness; nor was there sharp outlined margin. A small black spot developed at the corner of the mouth; the lips were swollen and parched. Both eyes were closed and a secretion was on the eyelashes like that seen in small children. All the swelling had a blue-black discoloration. Temperature was 103 F., pulse 110. There was neither crepitation nor fluctuation.

A few incisions were made, but they afforded no relief. They were painless. A small quantity of dark and thin fluid escaped, no gas, no odor, no pus. Some incisions were deep, some rather superficial. I also gave 10 c.c. antistreptococcus serum, and covered the swollen area with the solution already mentioned.

All the symptoms and swelling increased; the small black spot spread over the mucous membrane of the cheek and developed into necrosis. The patient died four and a half days after onset of symptoms. In the last twenty-four hours the disease resembled puerperal fever, the temperature being up to 107 F.; there was feeble, almost imperceptible, pulse. During his illness the man received 30 c.c. of antistreptococcus serum.

What kind of an infection was this? Septicemia appears on the death certificate. AUGUST BECHTOLD, M.D., New Athens, Ill.

ANSWER.—The pimple surmounted by crust which was removed with the finger, the great swelling, the watery fluid which exuded from the incisions, the absence of pain, the bluish discoloration, the development of gangrene, the high temperature and the very rapid progress ending in death point clinically to infection with the anthrax bacillus. This could easily have been verified by a microscopic examination of the fluid from the open pimple.

TINCTURE OF WHITE SOAP

To the Editor:—Some time ago you published a formula for making a neutral liquid soap. I have lost this recipe. Please publish it again. E. J. BERNSTEIN, M.D., Kalamazoo, Mich.

ANSWER.—Our correspondent probably refers to tincture of white soap, the formula of which was given by F. P. Dunnington, Charlottesville, Va., in the *Old Dominion Journal of Medicine and Surgery*, August, 1909, and which was quoted in the Department of Current Medical Literature of THE JOURNAL, Sept. 25, 1909, p. 1058, as follows (with apothecaries' amounts added):

R		gm. or c.c. for 1 gallon.
White castile soap (Conti's)	5xl	1,200
Ammonia water, stronger	fl.3iii	100
Alcohol	Oii	1,400
Water, distilled	q. s. ad. Oviii	4,000

The specific gravity of this mixture is 0.97, which is identical with that of green soap. Soft water (rain-water) might well be substituted for the distilled water in the formula.

To make one gallon: Mix the liquids for it in a one-gallon jar and then add the soap, previously cut into coarse shavings. Crowd all the soap into the jar and cover it with a glass plate. After twelve hours stir, and again stir after some hours. Allow to settle twelve hours, and then filter, decant or syphon off the clear liquid into a can, which may be kept closed. There will remain a few ounces retaining the impurities of the soap, which may be used for less particular washing. If this liquid is exposed to evaporation for a few hours, ammonia and alcohol escape, and a mass of the consistency of green soap will be obtained. While this preparation is said to be free from the objections to tincture of green soap, it presents the additional advantage of costing but $1.50 a gallon, and, if the alcohol is obtained tax-free, the cost will be about 60 cents a gallon, while tincture of green soap will cost $1 or more.

DIFFERENCE BETWEEN A VEGETABLE AND AN ANIMAL CELL

To the Editor:—What is the difference between a vegetable cell and an animal cell? I can find nothing on this subject in any of the books I possess; from what I know of the subject I can see no difference. A. D. BUNDY, Osage, Iowa.

ANSWER.—The fundamental difference appears to be physiologic and connected with the separate manner of nutrition prevailing in the two kingdoms. The typical vegetable builds up its structure from carbon dioxid, water, ammonia and other substances existing in the air and soil. The animal has not this power and must use the material already formed by the vegetable or by other animals. As a result of this mode of nutrition it is found that cellulose, a modification of starch, is found only in vegetables and is employed by most vegetables in forming the cell wall. Cellulose is never found in the cell walls of animals. Some vegetables do not form cell walls composed of cellulose and such vegetable cells have no essential distinguishing features to differentiate them from animal cells.

The Public Service

Medical Department, U. S. Army

Changes for the week ended April 15, 1911.

Crampton, Louis W., colonel, relieved from duty in the Philippines division and will proceed on transport to sail from Manila, P. I., to San Francisco, about Sept. 15, 1911, and on arrival at the latter city to report by telegraph to the adjutant general of the Army for further orders.

McEnery, Douglas W.; Turnbull, Samuel J., and Upshur, Alfred P., M.R.C., ordered to active duty and will proceed to San Antonio, Texas, for duty with the maneuver division at that place.

Boehs, Charles J., M.R.C., ordered to active duty and will proceed to Plattsburg Barracks, N. J., for duty at that place.

Ragan, Charles A., captain, assigned to permanent duty at Walter Reed General Hospital, Takoma Park, D. C.

Kendall, William P., lieut.-colonel, left Fort Riley, Kan., on thirty days' leave of absence.

Wallace, George S., M.R.C., left Fort Sam Houston, Texas, for duty in the field at presidio of Texas.

McMillan, C. W., lieut., relieved from duty with the maneuver division, San Antonio, Texas, about July 1, 1911, and ordered to Fort St. Michael, Alaska, for duty.

Whaley, Arthur M., captain, on being relieved from duty at Fort St. Michael, Alaska, by First Lieutenant McMillan will proceed to Seattle, Wash., for further orders.

Roberson, Horace M., lieut., relieved from duty with the maneuver division, San Antonio, Texas, about July 1, 1911, and ordered to Fort Davis, Alaska, for duty.

Harmon, Daniel W., lieut., on being relieved from duty at Fort Davis, Alaska, by First-Lieutenant Roberson will proceed to Seattle, Wash., for further orders.

Gosman, George H. R., major, left Fort Barrancas, Fla., for Tokyo, Japan, for duty as attache at the American embassy.

DeLaney, M. A., major, ordered to proceed to Philadelphia on official business pertaining to the medical corps of the Army.

Medical Corps, U. S. Navy

Changes during the week ended April 15, 1911.

Ames, M. H., P. A. surgeon, detached from the naval hospital, Olongapo, P. I, and ordered to temporary duty on board the *Albany*.

Turner, H. W. B., asst. surgeon, detached from the *Barry* and the Asiatic torpedo fleet and ordered to the naval station, Olongapo, P. I.

Thomas, G. E., asst. surgeon, detached from the naval station, Olongapo, P. I., and ordered to temporary duty on board the *Saratoga*.

Hart, S. D., asst. surgeon, detached from the *Mohican* and ordered to the *Barry*.

Cook, F. C., surgeon, ordered to command the naval hospital, navy yard, Puget Sound, Wash.

Hale, G. D., P. A. surgeon, detached from the *Idaho* and ordered home to await orders.

Manchester, J. D., P. A. surgeon, detached from the naval recruiting station, Chicago, and ordered to duty at the naval hospital, naval training station, North Chicago.

Smith, W. B., P. A. surgeon, orders of March 17 modified; ordered to duty at the naval hospital, Annapolis, Md.

Ely, C. F., P. A. surgeon, detached from the naval hospital, Philadelphia, and ordered to the naval proving ground, Indian Head, Md.

Halton, E. P., asst. surgeon, detached from the naval medical school, Washington, D. C., and ordered to the naval station, Guam, M. I.

Brown, E. M., asst. surgeon, detached from the naval proving ground, Indian Head, Md., and directed to await orders.

Ohnesorg, K., surgeon, detached from the *Prairie* and ordered home to await orders.

Stuart, Jr., D. D. V., asst. surgeon, detached from the naval medical school, Washington, D. C., and ordered to the *Idaho*.

Mears, J. B., P. A. surgeon, detached from the *Franklin* and ordered to the Asiatic station.

Howard, J. V., asst. surgeon, detached from the naval medical school, Washington, D. C., and ordered to the *Supply*.

Pratt, L. L., Omelvena, J. G., and O'Malley, J. J., asst. surgeons, detached from the naval medical school, Washington, D. C., and ordered to the Asiatic station.

Crow, G. B., asst. surgeon, detached from the naval station, Guam, M. I., and ordered home to await orders.

Toulon, A. J., asst. surgeon, detached from the *Supply* and ordered home to await orders.

Elmore, B., A. A. surgeon, ordered to the marine recruiting office, district of the Pacific coast, Seattle, Wash.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended April 12, 1911.

Stimpson, W. G., surgeon, directed to proceed to Marcus Hook, Pa., and Delaware Breakwater quarantine station on special temporary duty.

Anderson, J. F., P. A. surgeon, detailed to represent the Service at the meeting of the American Association of Pathologists and Bacteriologists to be held in Chicago, April 14-15, 1911.

McClintic, T. B., P. A. surgeon, directed to proceed to Delaware Breakwater quarantine station on special temporary duty.

Vogel, C. W., P. A. surgeon, directed to proceed to Marcus Hook, Pa., on special temporary duty.

Warren, B. S., P. A. surgeon, granted fourteen days' leave of absence from April 8, 1911, on account of sickness.

McKeon, F. H., P. A. surgeon, relieved from duty at the immigration station, San Francisco, and directed to report to the commanding officer of the Revenue Cutter *Rush* for duty.

Bailey, C. A., A. A. surgeon, directed to accompany the staff of the U. S. Immigration Service from St. John, N. B., to Quebec, P. Q., for the inspection of arriving aliens.

Hough, J. S., A. A. surgeon, granted thirty days' leave of absence to be taken at such times as may be approved by Surgeon B. W. Brown.

McLarty, A. A., A. A. surgeon, died March 24, 1911.

Board of medical officers convened to meet at the Bureau, April 11, 1911, for the examination of Assistant Surgeon J. R. Hurley, and reconvened, April 24, 1911, for the examination of Assistant Surgeon W. M. Bryan, to determine their fitness for promotion to the grade of passed assistant surgeon. Detail for the board: Assistant Surgeon-General W. J. Pettus, chairman; Assistant Surgeon-General L. E. Cofer; Passed Assistant Surgeon L. L. Lumsden, recorder.

Board of medical officers convened to meet at San Francisco, April 24, 1911, for the examination of Assistant Surgeon A. J. Lanza, to determine his fitness for promotion to the grade of passed assistant surgeon. Detail for the board: Surgeon Rupert Blue, chairman; Passed Assistant Surgeon M. W. Glover; Passed Assistant Surgeon Friench Simpson, recorder.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

LEGAL RIGHTS AND OBLIGATIONS OF PHYSICIANS *

John E. Kehoe

CHICAGO

The most important legal question for the physician is that which relates to the rights, duties, legal obligations, responsibilities and liabilities of the physician in caring for his patient. This is becoming a more important question every day. Litigation in the nature of suits for damages of various kinds is, at present, occupying about three-quarters of the time and attention of the courts of Cook County. It almost seems as if the entire populace was trying to find an excuse for suing somebody for damages, and, in this epidemic of damage litigation, physicians and surgeons are by no means forgotten. If a person is dissatisfied with the professional service rendered by the physician or surgeon, it apparently is becoming almost the rule, rather than the exception, to consult a lawyer and see if some basis cannot be found for starting a suit for damages in which the lawyer, as a rule, agrees to accept a contingent fee, consisting of a percentage of the amount to be recovered. It becomes a very important matter, therefore, for the physician to know what his legal rights and obligations are, in order that while doing his full duty to his patient he may, at the same time, protect himself from the danger, embarrassment and annoyance of a claim for damages in case his patient is dissatisfied. A physician's rights and legal obligations are controlled by certain legal principles which, grouped together, are known as the law of negligence. Negligence is defined in law to be an omission to do something which a reasonable man, guided by those considerations which ordinarily regulate the course of human affairs, would do; or, doing something which a reasonable and prudent man would not do. In order to maintain an action for negligence, there must be shown to exist some obligation or duty which has been left undischarged or unfulfilled.

To understand just what constitutes legal actionable negligence on the part of a physician, it is necessary to bear in mind the various degrees of care which the law exacts under various conditions. There are a number of degrees of care under the law: First, there is the highest degree of care which human forethought, reason and diligence can attain. Where the law imposes this highest degree of care, as, for instance, in the case of a railroad company carrying passengers for hire, the slightest negligence or simplest omission of duty becomes actionable in law. This highest degree of care, however, is not exacted or required of a physician or surgeon under the law of this state, or in any other state of the Union. The next degree of care, under the law, is what is known as ordinary care or reasonable care, and is defined in law as being that degree of care which an ordinarily prudent person would exercise under the same circumstances or conditions. This is the degree of care which, together with the exercise of a proper degree of skill, is required in law from a physician or surgeon in the discharge of his duty to his patient.

Going on down the scale, there is a lack of care known to the law as gross negligence which, of course, both as a matter of reason and law, would lay the foundation for damages. There is also known to the law what is called wilful or wanton misconduct, which may be defined as an act showing a willingness to harm the person in question, or such an utter disregard of his rights as to indicate an abandoned or malignant heart. Such conduct in any walk of life would be actionable, and the law says that, as against a claim for wilfulness or wantonness, it is not even necessary that the person presenting the claim must show himself to have been in the exercise of ordinary care.

It will be seen from the above that neither is the highest degree of care exacted of, nor is a low degree of care tolerated on, the part of the physician or surgeon. In other words, the physician and surgeon is held in law to the exercise of ordinary, reasonable care and skill. In general, his duty may be defined substantially as follows: The physician is bound to bestow such reasonable ordinary care, skill and diligence as physicians, in the same neighborhood, in the same general line of practice, ordinarily have and exercise in like cases. Time and locality are to be taken into consideration, and the physician is bound to exercise the average degree of skill possessed by the profession in such locality. In the absence of special agreement, his engagement is to attend the case as long as it requires attention; unless he gives

* Read before the Evanston Branch, Chicago Medical Society, March 30, 1911.

notice of his intention to discontinue his visits, or is dismissed, he is bound to exercise reasonable and ordinary care and skill in determining when his attendance should cease. But his engagement is not to cure the patient, that is, he does not insure that his treatment will be successful; the mere failure to effect a cure does not even raise a presumption of a want of proper care, skill or diligence. It is the duty of the patient to cooperate with the physician and to conform to his prescriptions and directions, and, if he neglects to do so, he cannot hold the physician responsible for his own neglect. On the other hand, he has a right to rely on the instructions and directions of his physician, and incurs no liability by so doing.

This is substantially the rule in Illinois and in practically every other state. There is an implied contract on the part of the physician that he possesses that reasonable degree of skill, learning and experience which is ordinarily possessed by others of his profession, and that he will use reasonable and ordinary care and diligence in the treatment of the case committed to him, and that he will use his best judgment in all cases of doubt, as to the best course of treatment. He is presumed to possess the degree of skill above defined, and to exercise reasonable care and to use his best judgment, but he does not guarantee that his judgment is infallible, and he cannot be held in law responsible for an error of judgment where he shows that he exercised ordinary care, and that he possessed the skill ordinarily possessed by others of his profession in the given locality. His failure to effect a cure can never be held to indicate even a presumption of want of care or skill. It will be noted that the locality is a matter to be taken into account. In a rural community with limited opportunities, the same degree of skill is not required as that which is exacted in a metropolis, where superior advantages are available. For instance, a general practitioner who had had but little experience in the treatment of the eye would not be justified in performing a delicate and dangerous operation on the eye of a patient in a community where a specialist of especial skill and experience is obtainable; while the same general practitioner might be entirely justified in law in attempting the same operation in a community where it was impossible to secure the services of such a specialist. Time and place, therefore, cut some figure in the matter, but the general rule remains universally true that only such care and skill are required as are possessed and applied by physicians in good standing in the community. The Supreme Court of this state has said that you cannot exact of the physician the highest degree of skill which the most learned might acquire in the profession, nor can you regard him as an insurer of the successful termination of his work; that he is not required to possess the highest order of qualifications to which some men attain, but that he must possess and exercise the degree of skill which ordinarily is possessed by members of his profession in good standing. For anything short of a reasonable amount of care and skill in his practice the law will hold him responsible, but the burden always rests on the one presenting the complaint to show that the physician was deficient in this regard. If the physician, in the exercise of reasonable care and skill, uses his best judgment in case of doubt, he cannot be held for a want of success, and so, in the treatment of disease or injury, he is bound to bring to his aid such obtainable remedies and appliances as discovery and experience have found to be most appropriate and beneficial in aiding recovery. But it may often happen that the most appropriate appliances or remedies are the very simplest and most commonplace, and, in such case, he is bound only to use his best judgment with reasonable care and skill. He is not liable, even if injurious results follow his treatment, unless it is shown that such injurious results were due to a failure to use ordinary reasonable care and skill. A fatal result may follow from the peculiar condition of a patient of which the physician had no knowledge, or the peculiar temperament of the patient over which he had no control, and, in such case, the exercise of his best judgment, with the care above defined, constitute a complete defense. The fact that a patient grew worse under the treatment of one physician and became better under the care of another, does not even raise a presumption in law that the treatment of the first was not proper. In other words, the law will not permit the drawing of a conclusion of unskilfulness from the result of the treatment alone. A physician, in passing from a patient infected with a contagious disease to others who are not so infected, must take such reasonable precautions as experience has shown to be necessary to prevent the communication of the infection, but if he does this he will not be held liable for the consequences. In the application of the general rule, a physician is chargeable with the knowledge of the probable consequences of the form of treatment or operation that he undertakes, and is expected to exercise ordinary care and skill to prevent unfavorable consequences. Under the general rule of wilfulness and wantonness, a physician may be held liable for exemplary damages, that is, damages by way of punishment, if it be shown that he was guilty of such a gross want of care as to indicate that he was probably conscious of the consequences of his carelessness and indifferent to the danger to which he subjected the patient.

The patient has a right to assume that one holding himself out as a surgeon possesses reasonable skill; and so, if a physician attempts to perform surgical operations, when his lack of experience renders it impossible for him to exercise ordinary skill, his ignorance of the knowledge of his profession will not constitute an excuse.

The principle of ordinary care applies also to the question of attendance on a patient; that is, there is a duty on the physician to continue his attentions so long as from the condition of the patient one might reasonably expect him, in the exercise of an honest judgment, to believe it necessary, and any culpable neglect on his part in this regard would render him liable to an action. A physician who leaves a patient at a critical stage of a disease, without reason or without attempting to procure another medical attendant, would be held in law to be guilty of actionable negligence. Of course, if he is discharged by some one in authority, this relieves him of responsibility; but ordinarily he must exercise reasonable care in determining when his attendance may be safely discontinued; but no error of judgment in this regard, or any other matter pertaining to his treatment will render him liable for consequences where he keeps within recognized and approved methods, and uses his best judgment with ordinary care and skill. No error of judgment will hold the physician responsible, unless it is so gross as, on its face, to imply a want of ordinary care and skill. Of course, an error of judgment may be so great as to be inconsistent with the belief that ordinary care and skill were exercised. For instance, a man might hold himself out to the world as an oculist, without any knowledge of the science, and obtain a patient and commence tinkering with the most delicate of all the organs, the eye, and destroy the sight. Perhaps it would only be an error of judgment, but it would be such an error as to constitute malpractice.

The physician must exercise ordinary care in giving proper instructions to those in attendance on the patient, and a failure in this regard, if it results in damage to the patient, is actionable. In other words, he must exercise the same care in giving proper instructions to the attendants, where attention is necessary in his absence, as he gives in his own work on the case.

Another principle to be borne in mind is that the physician must follow established practice. The rule is very strict against trying experiments. On its face, this rule seems rather harsh, because it means that any advancement in the profession must be at the personal risk of the physician rather than of the patient. It has been held in many of the states that any deviation from the established mode of practice is sufficient to charge the surgeon in the case with any injury resulting to the patient. In general, the physician is bound by what is universally settled in the profession, not by what some writers and practicing surgeons recommend. If the ordinary and established practice of the profession is to treat an

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ailment in a particular manner, and the attending physician adopts some other mode that proves injurious, it is immaterial how much skill he possessed, since his experiment failed. If the settled practice of the profession allows but one course of treatment in the case, any departure from such course is at the physician's risk. He cannot try experiments with his patient to the patient's injury.

When we consider the wonderful advance in medicine and surgery from generation to generation, and consider how near it comes to being an exact science to-day, and how crude and barbarous were the methods described by early writers, and when we remember that all of this advance is the result of new discoveries, new experiments and new methods developed by skilled and learned members of the profession from age to age, the rule above set out seems very harsh, but it is an almost universal rule and it is one that physicians must bear in mind for their own protection.

There are some modifications to the rule: In case of emergency, when there is no well-known method that could be relied on in the particular case, and when the physician must act hastily with such means as are at his command, the rule, of course, would not be enforced. Again, by ordinary and established practice is meant the established practice of the physician's own school, and he is only expected faithfully to treat the patient according to the recognized rules of his particular school. Although someone else might think that some other school of medicine was better, his skill is to be judged by the school of practice to which he belongs and according to the avowed system which he professes. Of course, the law requires him to come up to at least the average standard of the school to which he adheres. By school in this sense the law means generally recognized method of treating disease or injury. A person who attempts to practice as a clairvoyant, or who attempts to heal disease by means of some occult influence exercised by him or some mental intuition received by him when in an abnormal condition, cannot excuse himself on the ground that he is practicing according to his school, but must take the risk if he fails to exercise the skill ordinarily possessed by a reputable practicing physician or surgeon.

In some states it has been held that if the service rendered was gratuitous the physician is not held to the exercise of so high a degree of care, but the rule in Illinois is that if a person holds himself out to the public as a physician he will be held to the exercise of ordinary care and skill in every case, whether he receives a fee for his service or not.

It is perhaps well to say, in connection with the rule of ordinary care above laid out, that the law imposes on the person making the complaint the duty of showing that he also exercised reasonable and ordinary care in carrying out the physician's instructions and in attempting to heal himself. Any failure in this regard on his part, if shown in an action, is a complete bar to his right of recovery in law; that is to say, in order to maintain his action, he must show two things: first that he was not guilty of any failure to exercise ordinary and reasonable care in carrying out the instructions of the physician and in attempting to cooperate with the physician for his own recovery, and second, he must show that the physician failed to exercise ordinary and reasonable care and skill in the conduct of the case; the burden of proof rests on the complainant in both of these respects.

164 Dearborn Street.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Ninth Month—Fourth Weekly Meeting

DISEASES OF THE NERVOUS SYSTEM (CONTINUED)

TUBERCULOUS MENINGITIS

PATHOLOGY: Tubercle, size, number, locations. Changes in pia and dura, in brain substance. Character, quantity and location of exudate. Association of meningitis with other tuberculous lesions. Relation of symptoms to lesions.

SYMPTOMS: Prodromata, onset, duration of early symptoms. Convulsions, stupor or coma, headache, crying, muscular rigidity, eye symptoms, gastro-intestinal symptoms. Pulse, temperature and respiration. Second stage: Increase of early symptoms, paralyses, eye symptoms, mental symptoms, respiration. Duration of second stage. Third stage: Coma, eye symptoms, pulse, temperature, respiration. Variations in course of disease at different ages. Duration and prognosis.

CHRONIC BASILAR MENINGITIS (STILL)

ETIOLOGY: *Diplococcus intracellularis.* Syphilis.

SYMPTOMS: Previous history. Onset, opisthotonos, hydrocephalus, muscular rigidity. Eye symptoms. Mental condition. Course and duration.

CHRONIC INTERNAL HYDROCEPHALUS

ETIOLOGY: Primary, congenital, cases; heredity, syphilis, rickets. Secondary; tumor, meningitis.

PATHOLOGY: Quantity, physical and chemical characteristics of fluid. Secondary changes in fluid. Changes in brain substance, in ependyma, in bony structures.

SYMPTOMS: Size of head, character and rate of enlargement. Sutures and fontanelles. Motor symptoms. Eyes, mental symptoms. Clinical varieties.

Monthly Meeting

The Diagnosis and Treatment of Congenital Heart Disease.
The Treatment of Convulsions in Infants and Children.
The Early Diagnosis of Tuberculous Meningitis.
The Diagnosis and Treatment of Cerebrospinal Meningitis.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Regular, Little Rock, May 9. Sec., Dr. F. T. Murphy, Brinkley; Homeopathic, Little Rock, May 9. Sec., Dr. P. C. Williams, Texarkana; Eclectic, Little Rock, May 9. Sec., Dr. G. A. Hinton, Hot Springs.

FLORIDA: Regular, Tallahassee, May 8-9. Sec., Dr. J. D. Fernadez, Jacksonville; Eclectic, Lakeland, May 1-3. Sec., Dr. Hiram J. Hampton, Tampa.

GEORGIA: Homeopathic, Atlanta, May 2. Sec., Dr. R. E. Hinman, 153 Whitehall St., Atlanta.

ILLINOIS: City Hall, East St. Louis, May 3-5. Sec., Dr. J. A. Egan, Springfield.

KENTUCKY: The Armory, Louisville, May 31. Sec., Dr. J. N. McCormack, Bowling Green.

LOUISIANA: Regular, New Orleans, May 18-20. Sec., Dr. A. B. Brown, 108 Baronne St.; Homeopathic, New Orleans, May 1 Sec., Dr. John T. Crebbin, 1207 Maison Blanche Building.

MASSACHUSETTS: State House, Boston, May 9-11. Sec., Dr. Edwin B. Harvey, Room 159, State House.

MISSISSIPPI: Jackson, May 9. Sec., Dr. S. H. McLean.

NEBRASKA: State House, Senate Chamber, Lincoln, May 24. Sec., Dr. E. Arthur Carr, 141 S. 12th Street.

NEVADA: Carson City, May 1-3. Sec., Dr. S. L. Lee.

NEW YORK: May 23-26. Mr. Harlan H. Horner, Chief of Examinations Division, Department of Education, Albany.

WISCONSIN: Milwaukee, May 24-26. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

New Mexico January Report

Dr. J. A. Massie, secretary of the New Mexico Board of Health and Medical Examiners, reports the written examination held at Santa Fe, Jan. 9, 1911. The number of subjects examined in was 11; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 2, both of whom failed. Fourteen candidates were licensed on presentation of satisfactory credentials. The following colleges were represented:

FAILED

College	Year Grad.	Per Cent.
Tennessee Medical College	(1906)	44
Gate City Medical College	(1909)	35.4

LICENSED ON PRESENTATION OF SATISFACTORY CREDENTIALS

College	Year Grad.
Columbian University, Washington, D. C.	(1894)
Georgetown University	(1908)
Louisville and Hospital Medical College	(1908)
University of Louisville	(1905)
Michigan College of Medicine and Surgery	(1897)
University Medical College, Kansas City	(1901) (1909)
American Medical College, St. Louis	(1891)
New York University Medical College	(1884)
Toledo Medical College	(1907)
Medico-Chirurgical College, Philadelphia	(1906)
University of Nashville	(1904)
Vanderbilt University	(1906)
Medical College of Virginia	(1899)

District of Columbia January Report

Dr. George C. Ober, secretary of the Board of Medical Supervisors of the District of Columbia, reports the written examination held at Washington, Jan. 10-13, 1911. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 7, of whom 6 passed and 1 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
George Washington University	(1909)	78.7
Johns Hopkins University	(1910)	85.7
University of Michigan, Dept. of Med. and Surg.	(1898)	79.2
St. Louis College of Physicians and Surgeons	(1910)	76.9
Jefferson Medical College	(1909)	84.4
University of Virginia	(1910)	82.5

FAILED

Jefferson Medical College	(1908)	69.3

Book Notices

DEUTSCHES ARZNEIBUCH. Fünfte Ausgabe 1910. Paper. Price 3.90 marks. Pp. 680. Berlin: R. v. Deckers Verlag, G. Schenck, Königlicher Hofbuchhändler, 1910.

It has frequently been asserted that pharmacopeias, more than any other publication, reflect the ideals and the practices of the medical profession of the time and the country for which they are published. Accepting this statement as based on fact we can readily appreciate the reasons why this, the fifth, edition of the "German Medicine Book" has been so anxiously awaited by pharmacists and by teachers of materia medica. As indicated by the absence of the Latin synonym accompanying the official title in former editions, the present book is thoroughly German and, in fact, is the first of the several editions to be compiled entirely under government supervision, in the division on materia medica of the "Reichs Gesundheitsamt."

Because of the many innovations embodied in this edition the book is being liberally discussed and promises to prove the forerunner of a new era in medicine and pharmacy by indicating how the medicaments used by the physician can and should be controlled to insure their purity and efficiency. To appreciate this more fully it should be understood that in Germany the object and the use of the pharmacopeia is somewhat sharply defined and the book is recognized primarily as one of directions for the apothecary in the manufacture and control of medicaments designed to be used on physicians' prescriptions.

One of the more important innovations is the liberal recognition that has been accorded to perpetually protected or trademarked names. The German government by introducing proprietaries into its pharmacopeia not only gives due credit to German chemical industries for the introduction of new remedies but also safeguards the interests of the public by requiring that the medicaments advertised and sold under recognized trade names must conform to pharmacopeia requirements. Where a scientific designation is more convenient or in general use, it has been adopted as a chief title followed by the trade name.

In addition to the rather liberal recognition given to new remedies, a number of general descriptions or class headings have been adopted. These have long been a distinctive feature of the German Pharmacopeia and are of great practical value, particularly in a book which, like the one under discussion is designed to serve as a guide to the apothecary in the compounding of prescriptions and not to be a book of standards for regulating the trade in drugs and medicines generally. The new pharmacopeia contains a total of forty-four titles more than the Pharmacopeia Germanica IV and this difference is largely made up of new remedies and general headings.

For the medical practitioner in countries other than Germany and more particularly for the medical practitioner of the United States this edition of the German Pharmacopeia is an indication of the services that can and should be rendered by the pharmacist in controlling and safeguarding the identity and purity of the drugs used in the treatment of diseases. With the practice of pharmacy in this country based on scientific training and the pharmacist able to control and to guarantee the purity and efficiency of the drugs he dispenses there would be little or no need for special brands of medicines and absolutely no need for the many ready-made mixtures of the patent medicine type now prescribed by physicians.

I. REPORT ON AN OUTBREAK OF TYPHOID FEVER AT OMAHA, NEB. (1909-1910). By L. L. Lumsden. II. THE WATER SUPPLY OF WILLIAMSON, W. VA., AND ITS RELATION TO AN EPIDEMIC OF TYPHOID FEVER. By W. H. Frost. Hyg. Lab. Bull. 72. November, 1910, U. S. P. H. and M.-H. S. Paper. Pp. 94, with illustrations. Washington: Government Printing Office, 1910.

L. L. Lumsden reports an investigation of an epidemic of typhoid in Omaha, lasting from November, 1909, to March, 1910, a brief account of which was given in THE JOURNAL, May 7, 1910, p. 1555. After eliminating, through a study of the statistics of 105 cases, such sources of infection as milk, ice, etc., a detailed account is given of the probabilities of water as the carrier. The public supply is obtained from the Missouri River at two points, one at some distance above Omaha, and the other at the city. The water is stored for about six hours, and alum is added for a coagulant. Sewage enters the river about 8 miles above the city intake, as well as at a number of places along the banks at no great distance from the city. The number of cases of typhoid fever among persons using water from this latter intake was disproportionately large. Analyses are given showing that the water from both intakes was badly polluted in spite of the attempted purification. A study of climatic conditions led the author to believe that during the fall of 1909 the river was subject to more than the usual degree of pollution. Infected water is regarded as without doubt the source of the outbreak. Recommendations are made that the river be more carefully guarded against dangerous pollution, and that the water be treated by mechanical filtration followed by the addition of hypochlorite of lime.

W. H. Frost, in the same bulletin, reports an investigation made during May and June, 1910, of an epidemic in Williamson, W. Va., which started about Nov. 1, 1909, and continued for several months. The general sanitary condition of the town and the water-supplies was carefully studied. A high power of pollution was found to exist not only in the town water but also in a number of shallow wells, which are in rather general use as the public supply is of a disagreeable character, being obtained from a river which receives washings from a coal mine located in one part of the town. Frost believes that the original source of the epidemic was the water, which became more than usually polluted on account of the low condition of the river in the fall of 1909 and the many possible sources of contamination which exist along its banks. A normal condition was resumed in January, but typhoid fever still continued. This is believed to have been due to contact infection. A study of the statistics of the later cases showed that many had to come in contact with previous cases. More evidence is furnished for this belief by the facts that in a majority of instances no efficient means of disinfection were used, and that great opportunity exists for contamination of wells, owing to the generally poor sanitary arrangements.

Recommendations are made: (1) that the public supply be purified with hypochlorite of lime or ozone, a new supply being considered impractical on account of the lack of sources in the region; (2) that methods of sewage disposal be improved; (3) that more careful disinfection be employed; (4) that the board of health supervise the sale of milk and other foods.

PLASTIC AND COSMETIC SURGERY. By Frederick Strange Kolle, M.D., Fellow of New York Academy of Medicine. Cloth. Price, $5. Pp. 511, with 522 illustrations. New York: D. Appleton & Co., 1911.

The author has brought together in this work a rather full statement of the plastic surgery of the head and face. Preliminary to this he takes up the principles and the practical details of operations in this field, and thus in reality gives the first 100 pages to a consideration of minor operative surgery. In successive chapters he considers the plastic surgery of the eyelids, the ears, the lips, the mouth, and the cheeks; and these chapters are good. They represent a grouping of the subject of plastic surgery of the face and head that is valuable to anyone looking for practical knowledge in this field. The plastic and cosmetic surgery of the nose is taken up after considering paraffin prosthesis.

To the subject of subcutaneous hydrocarbon prosthesis Kolle gives 130 pages, in which the subject is very fully considered. It is a very useful presentation of the subject, to which anyone may turn with satisfaction for information. The author is a very enthusiastic advocate of paraffin prosthesis for the correction of defects. In its use for the correction of serious anatomic defects or deformities we have no criticism of his position to offer, but its use for the removal of trivial cosmetic defects—to smooth out wrinkles, to fill out hollow necks or flabby cheeks, for decorative purposes, for example—we believe should be very strongly condemned. Those of us who are seeing the hyperplastic tumors sometimes following these injections are impressed with the fact that to justify putting a mass of paraffin into the connective tissue there should be a more important indication than the smoothing out of a wrinkle or the improvement of the contour of the alæ nasi, particularly as in making the change one gives the injected tissue all of the motility of a graven image.

On the whole the work will be found a useful treatise on the subject of which it treats.

THE HEALTH INDEX OF CHILDREN. By Ernest Bryant Hoag., M.A., M.D., Medical Director of Berkeley Schools. With Prefatory Note by Frank F. Bunker, Ph.B., Superintendent of Berkeley Schools. Cloth. Price, 80 cents. Pp. 188, with illustrations. San Francisco: Whitaker & Ray-Wiggin Co., 1910.

Dr. Hoag has that happy and all-too-rare ability to address the layman in the layman's own language without in the slightest degree compromising scientific accuracy. Perhaps a single exception may be found in the title of this book itself, which fails to convey to the uninitiated its real purpose and nature as the title of a popular treatise really should.

"The object of this little manual," to quote the author himself, "is to show teachers and parents how to detect easily those ordinary physical defects of the child which bar his progress in school and life, and to suggest means by which such defects may be removed and good health afterward maintained. Incidentally, it may prove of some value to physicians who are for the first time applying themselves to this special sort of public health work." The book contains just such practical information as every parent, teacher and school inspector should have to enable them to detect in their incipiency such defects as adenoids, deafness, eye-strain, nervousness, defective teeth, and to take the proper measures to have them remedied before irreparable damage has been done. The book contains admirable diagnostic tables, few but well-chosen photographs, clean-cut simple summaries, curves and diagrams, all so plain that any mother of average intelligence can understand them. In the present far-reaching tendency to take an eager public into the confidence of the medical profession, this little book should take a prominent position because it deals with those at the threshold of life where defects can be prevented or easily remedied. Such books are the natural antidote to the isms that have grown fat on ignorance; and we wish that every mother and father and school teacher could "read, mark, learn and inwardly digest" this little volume.

PRACTICAL PHYSIOLOGICAL CHEMISTRY. By R. H. Aders Plimmer, D.Sc., Assistant Professor of Physiological Chemistry, University College, London. Cloth. Price, $1.80. Pp. 270, with 49 illustrations. New York: Longmans, Green & Co., 1910.

In this book an attempt is made to cover too much ground in a small space, and as a result both accuracy and clearness suffer. Thus, in the first thirty pages the student is informed on no greater number of subjects than qualitative and quantitative organic analysis, distillation, filtration, extraction, melting-point determination, boiling point determination, three methods of molecular weight determinations and discussions under headings such as "Constituents of a Cell" and "Life Cycle of the Elements." The remainder of the text is devoted to brief considerations of the most elementary features of organic chemistry and more or less detailed treatment of the biologically important constituents of protoplasm, the latter being considered from the qualitative and quantitative points of view. Statements such as that the constitution of d-glucose, d-mannose, d-galactose and d-fructose "is proved by their reduction to the corresponding hydrocarbon hexone and by oxidation" are very misleading. There is also at least one important omission. The pyrimidin bases are not mentioned; the student is simply told in different parts of the text that nucleic acid contains pentose, guanine and adenine, that it is obtained from nucleoprotein and that the latter contains phosphorus in the nuclein portion.

DIAGNOSTIK DER NERVENKRANKHEITEN. Von Dr. L. E. Bregman, Oberarzt am städtischen jüdischen Krankenhaus in Warschau. Mit einem Geleitwort von Dr. H. Obersteiner in Wien. Paper. Price, 12 marks. Pp. 535, with 193 illustrations. Berlin: S. Karger, 1911.

Of the books on the diagnosis of nervous diseases which have hitherto appeared in English or German, we know none which approaches the subject from the viewpoint of semeiology, a method which has long been in vogue among the French. It is this method which is successfully followed by Bregman. In sixteen short chapters he approaches diagnosis from such symptom-groupings as paralysis of motion, of sensation, the special senses, reflex and speech disturbances and other symptom-complexes, with, in addition, a chapter on the diagnosis of psychic disorders. In a work including so much, we might expect a mere collection of tabulated diagnostic aids. The author gives, however, a full and concise account of everything important in the clinical diagnosis of nervous diseases. To summarize, it may be said that all topics have been given due attention and are entirely up to date. This manual is the product of one who is not only well trained in the best methods of neurologic examination, but who can also explain them and teach how to correlate the findings. The book on the whole is a distinct gain to modern neurologic literature.

A STUDY OF THE AFTER-RESULTS OF ABDOMINAL OPERATIONS ON THE PELVIC ORGANS. Based on a Series of 1,000 Consecutive Cases. By Arthur E. Giles, M.D., Surgeon to the Chelsea Hospital for Women. Cloth. Price, 10 shillings 6 pence. Pp. 251. London: Ballière, Tindall & Cox, 8 Henrietta St., Covent Garden, 1910.

The author analyzes the after-results in 1,000 cases of pelvic operations. Only one who has attempted to follow up patients for some time after operations will appreciate the immense amount of labor it has cost the author to follow out and determine the present condition of 1,000 patients who had been operated on for pelvic diseases during the past several years. It too often happens that the patient who escapes from the hospital with her life is immediately reported as having been cured of her trouble; or, if the case is reported later, it is assumed that the patient is well simply because she has not been seen or heard of since the operation. It is only by the painstaking method adopted by Dr. Giles that the defects, as well as the advantages, of a given operation become apparent. In the first part of the work the author gives in detail the present condition of the patients, classified according to the particular operation performed, and in the second, a brief clinical history of each case.

The author is to be commended for the earnest effort made and congratulated on the excellent results obtained.

HANDBOOK OF TREATMENT FOR DISEASES OF THE EYE (OPHTHALMIC THERAPEUTICS). By Dr. Curt Adam, Assistant-Surgeon in the I. University Clinic for Diseases of the Eye, Berlin. With a Preface by Prof. von Michel, Berlin. Translated from the Second German Edition (1910), by William George Sym, M.D., F.R.C.S.Ed., and E. M. Lithgow, M.B., F.R.C.S.Ed. Cloth. Price, $2.50. Pp. 264, with 36 illustrations. New York: Rebman Co., (1911).

The second edition of this small manual, as its title indicates, contains the essentials of ophthalmic therapeutics. It is evident that a full account of this important subject cannot be crowded into so small a space, yet the book contains a surprisingly large amount of information. While it is merely a compend, we believe that it stands as a series of useful, predigested facts that will be more readily absorbed by the general

practitioner and by the student of ophthalmology than larger and more imposing treatises. The space (20 pages) set apart for the consideration of refraction and the prescribing of spectacles seems unduly restricted, at least to our American notions, but probably from the German point of view it is sufficient. The work has a place in ophthalmic practice if for no other reason than that judiciously written compendiums on special subjects are always of value to those who do not make a particular study of the medical department in question.

HERNIA. Its Cause and Treatment. By R. W. Murray, F.R.C.S., Surgeon, David Lewis Northern Hospital. Second Edition. Cloth. Price, $1.75 net. Pp. 184, with 62 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

In explanation of the existence of this little volume the author says: "My reasons are that I believe the explanation offered in the following pages as to the cause of hernia to be the true explanation and the results I have obtained by a simple method of operating are extremely encouraging." The author is a firm believer in the so-called saccular theory of the cause of hernia, which was so well presented some time ago by Mr. Hamilton Russell of Melbourne. Most surgeons who have given the subject much study are now convinced that the great majority of hernias are due to congenital defects in the shape of preformed sacs regardless of the age at which the rupture becomes evident. Murray's method of operating does not differ materially from the standard operation generally in use to-day. He merely emphasizes again the necessity of complete removal of the sac whenever that is possible.

LE TRONC CŒLIAQUE. Par Pierre Descomps, Prosecteur des Hôpitaux. Travail de l'Amphitheatre d'Anatomie des Hôpitaux. Recherches d'Anatomie Chirurgicale sur les Artères de l'Abdomen. Cloth. Price, 10 francs. Pp. 205, with 97 illustrations. Paris: G. Steinheil, 1910.

The amount of surgery being done in the upper abdomen on the organs which receive their blood-supply from the celiac axis makes it incumbent on the surgeon to have an accurate knowledge of these vessels, their surgical relations, anastomoses and their most common deviations from the normal. In order to be able to present this subject clearly, the author made a careful study of this region in fifty cadavers. The arteries were injected through one common iliac after ligating the opposite common iliac and the aorta just below the diaphragm. The findings in the fifty cases are well illustrated by ninety-seven figures, each of which is thoroughly described in a voluminous text of about 200 pages. The literature is also well covered and the findings of other anatomists are recorded, where these relate to deviations from the accepted normal. The work is an excellent study in descriptive and surgical anatomy and has a decided practical value.

HISTORY OF ANTHROPOLOGY. By Alfred C. Haddon, M.A., Sc.D., F.R.S., Fellow of Christ's College, University Reader in Ethnology, Cambridge. With the Help of A. Hingston Quiggin, M.A., Formerly of Newnham, Cambridge. Cloth. Price, 75 cents. Pp. 206, with illustrations. New York: G. P. Putnam's Sons, 1910.

This book is one of a series on the history of the various great divisions of science. In addition to the study of the origin, physical and mental characteristics of man, the subject of anthropology includes many of the other sciences, as archeology, technology, sociology and religion, linguistics, etc. The science of anthropology still remains more or less incoherent and unorganized on account of the imperfection of the data on which final conclusions can be based. The history of each of these tributary sciences is given, in so far as it has a bearing on anthropology, together with theories and sketches of men concerned with the development of the science. The book is illustrated, has an extensive bibliography and an index.

A FLESHLESS DIET. Vegetarianism as a Rational Dietary. By J. L. Buttner, M.D. Cloth. Price, $1.35 net. Pp. 287. New York: Frederick A. Stokes Co. (1910)

If Buttner has missed any point of view on this interesting and much-discussed subject, we fail to discover it. If thoroughness of treatment could settle the question, we should all be vegetarians after reading this book, for it is certainly comprehensive. There are elaborate tables and abundant quotations—even pages of quotations from the opponents of vegetarianism which the author includes in order to be fair. Thus the work will be of service as a work of reference, whether or not one accepts the author's conclusions. Its perusal will do good, as no doubt many people eat too much meat and too little of some valuable vegetable products.

HUGHES' PRACTICE OF MEDICINE. Including a Section on Mental Diseases and One on Diseases of the Skin. Revised and enlarged by R. J. E. Scott, M.A., B.C.L., M.D., Attending Physician to the Dem't Dispensary. Tenth Edition. Leather. Price, $2.50 net. Pp. 878, with 63 illustrations. Philadelphia: P. Blakiston's Son & Co. 1911.

This old standby for the student and the general practitioner is evidently keeping up the popularity it has enjoyed for so many years. This popularity is due to the fact that the book gives practical discussions of diseases as briefly as is consistent with the subject, theories being eliminated. The present edition has been brought thoroughly up to date, all necessary changes having been made to adapt it to modern medicine. Many of the articles have been practically rewritten, and some new ones added.

Medicolegal

License Rights of Certain Practitioners—Powers and Duties of State Board

The Supreme Court of Idaho holds, in Vadney vs. State Board of Medical Examiners (112 Pac. R. 1046), that, under the provisions of Section 1298 of the Revised Statutes of 1887, no person was permitted to practice medicine or surgery in that territory (now state) who had not received a medical education and a diploma from some regularly chartered medical school having a bona-fide existence at the time the diploma was granted, and when it appeared that the applicant for a license to practice medicine and surgery in the state was engaged in the practice of his profession under the provisions of the Laws of 1887, and had complied with all of the provisions of section 5 of the Act of 1899, it was the duty of the State Board of Medical examiners to issue to him a license to practice medicine and surgery in Idaho.

A diploma from a regularly chartered medical school, which has a bona-fide existence at the time the diploma was granted, and a compliance with the provisions of section 1298a and 1298b of the Revised Statutes of 1887, with reference to being identified and filing a copy of the diploma, was all the proof that the statute required at that time of the applicant's having a medical education, and under the act of 1899 the medical board had no authority to require any other or further evidence of the fact.

The State Board of Medical Examiners, under the law of 1899, had no authority to refuse a license to an applicant who was engaged in the practice of medicine and surgery under the Laws of 1887, on the ground that the college issuing the medical diploma under which he was practicing was not a "reputable college of medicine in good standing." The board had a right to determine the question about the college issuing the diploma being a "reputable college of medicine in good standing" under the Act of 1899, where the applicant had not been practicing medicine and surgery under the Act of 1887; but when the applicant had been practicing under the Laws of 1887, and made application under the fifth section of the Act of 1899 for a license, the board had no authority whatever to determine that question. If the plaintiff had a diploma from a regularly chartered medical school that had a bona-fide existence at the time the diploma was granted, that was all that was necessary, so far as the diploma was concerned.

If the plaintiff's application was not properly verified, it was the duty of the secretary of the board to return it to the applicant for verification, and if the persons who certified to the good moral character of the plaintiff were not satisfactory, the plaintiff ought to have been notified of that fact and given an opportunity to furnish the names of other persons who would certify to his good moral character, if he could.

Under the provisions of section 9 of the medical law of 1899 there is no provision for an appeal from an order of the State Board of Medical Examiners refusing to grant a license to an applicant; but said section contains a provision whereby

the proper court may review by certiorari certain proceedings of said board.

Relative Weight of Evidence of Attending Physicians

The Supreme Court of Louisiana holds, in the personal injury case of Rickerson vs. Town of Minden (53 So. R. 667), that the testimony of a physician who attended a person immediately after an accident is of more weight on the question of the seriousness of the injury than that of a physician who attended the injured person a year after the accident, for other causes and conditions might have intervened during the year.

Evidence of Fetus Being Quick

The Supreme Court of Kansas says that it was urged in the criminal abortion case of State vs. Hatch (112 Pac. R. 149) that only the mother or persons who have placed their hands on her body and felt the independent motion of the fetus can know whether or not it is quick. But if this were adopted as the iron-clad rule of evidence in such cases, the statute defining the crime of abortion would be practically impossible of enforcement after the death of the mother. The court prefers to hold that where physicians testify, as experts, to the measurements and appearance of a fetus found by them in the body of a deceased woman, and that from such measurements and appearance they each had an opinion as to the age of the fetus and as to whether the woman at her death was quick with child, it is competent to allow such witnesses to testify each to his opinion.

Proof of Amount of Earnings of Physician Not Necessary

The Court of Appeal of the Second District of California holds, in Washington vs. Pacific Electric Railway Co. (112 Pac. R. 904), that, in an action brought by a physician to recover damages for personal injuries, including damages for loss of earning power, the right to recover the latter is not dependent, under the decisions of that state, on proof of some specific or particular sum of money that had been or was at the time of the injury being earned by the plaintiff, where the evidence shows that the plaintiff was a practicing physician and several witnesses testify to having been attended at different times by the plaintiff professionally.

No Illegal Discrimination Against Hospital

The Supreme Court of California reverses a judgment recovered by the plaintiff, in Union Labor Hospital Association vs. Vance Redwood Lumber Co. and others (112 Pac. R. 886), an action brought against the defendant named and six other lumber companies to enjoin them from conspiring and combining together to vex, injure and destroy the hospital business of the plaintiff. The defendants, the court says, compelled every employee to consent to the deduction of $1 from his monthly wage, 12½ cents of which went into a contingent fund to help needy employees who might be injured and 87½ cents of which went to a hospital for an employee's ticket that entitled him to medical and surgical care and attendance in case of injury. The occupations of their men were dangerous. That provision should be made for the medical and surgical care of the men injured was most proper. No objection was made to this, nor to the means adopted to effectuate it, saving that the plaintiff contended that because its hospital was not on the list of enumerated hospitals from which the employees were authorized to make a selection, a species of unlawful discrimination was practiced against it. But the court does not agree with that, or, in other words, that there was an illegal boycott against the continuance of which the defendants should be enjoined.

There being no contractual relations between the plaintiff and the defendants, the defendants, individually or in combination, were under a duty only to refrain from inflicting a legal wrong on the plaintiff. Unquestionably there was nothing illegal in the measures employed by the defendants. The suasion or intimidation or coercion was purely moral, and went no further on the part of the defendants than a refusal to employ or to retain in their employ any one unwilling to comply with their hospital regulation. This was purely a matter between employer and employee, and, where no contract between them stands in the way, it is the unquestioned right of an employer to discharge at his pleasure, or to impose conditions on the retention of the employee in his employment.

The court is unable to perceive where any element of monopoly entered into this case, as the plaintiff claimed. The defendants had the undoubted right to deal with any hospital which they might select. In fact, they were dealing with four, and they were not even prohibiting their men from engaging the services of the plaintiff. That is, the defendants insisted merely that the employee buy a ticket in one of their designated hospitals. Then he was at liberty to buy an additional ticket in the plaintiff's hospital, though, in the nature of things, an employee having purchased a ticket in another hospital would not be likely to lay out more money for such a purpose. And since the acts of the defendants were within their legal rights, the motive for those acts was not a subject of inquiry.

Liability of Company Requiring Injured Person to be Taken to Physician

The Supreme Court of New Jersey holds, in Perkins vs. Trenton Street Railway Co. (78 At. R. 666), that where a printed rule of a trolley company required the conductor of a car in case an accident should occur to take the injured person to a physician, and the motorman met with an accident by which his leg was crushed, and the conductor telephoned to the plaintiff, a physician, who came and amputated the limb, the company was liable on contract to the physician for the value of the service thus rendered.

The court says that the requirement of the rule that when an accident occurs, and necessity for it exists, the conductor shall take the injured person to a physician is meaningless, unless it means that the physician is to render the professional aid necessitated by the accident. The court thinks that this is its meaning and that services of such a character when so rendered are rendered to the company through its duly authorized agent. The authority to take the injured person to the physician of course carries the authority to call the physician to the injured person.

The rule or instruction not making any distinction as to cases of accidents for which the company is not liable, the court, on reflection, thinks that no such distinction can be made in view of the ground on which the rule or instruction itself must be supported as a reasonable exercise of corporate regulation. The directors of the company will be presumed to have framed and promulgated this instruction in the interest of the stockholders. From this point of view they may well have considered that for every injury resulting from an accident in their cars a lawsuit is possible, in the course of which their liability would for the first time be authoritatively determined. If liable they may be deemed, from their knowledge of human nature, to know that the damages assessed by the jury would as a rule be largely enhanced by any show of inhumanity toward the plaintiff at the time of his injury, or any lack of immediate care for him at that critical juncture, and also that humane aid promptly secured by the company would be a circumstance likely to affect the jury favorably. The directors also knew, unless blind to the details of their business, that it is of the utmost importance in litigated accident cases that the medical witness who first sees and ministers to the injured person should not be one selected and paid (or to be paid after the suit) by such person, and still more that such witness shall not be selected by the attorney who prosecutes the suit for damages. A rule that would in all cases tend to secure unbiased testimony on this important feature of every such litigation would be an exercise of sound discretion by the directors.

This answers the objection that it is no part of the directors' duty to provide medical attendance for persons for whose injuries the company is not liable. For such liability cannot be determined at the instant of the accident, and that is the instant at which the conductor is required to act. So that in view of the reason suggested for such rule it would be a sound exercise of discretion for the directors to incur the slight expense in those cases in which it was ultimately determined

that the company was not liable in view of the far greater importance of the results flowing from such rule in cases where the question of damages was involved. For the same reason, and to the same end, the rule should not be interpreted, or rather frustrated, by making the conductor pass as judge and jury on the law and facts of an accident at the instant of its occurrence as the basis of his private judgment as to whether or not it came within the rule that prescribed his duties in case of an accident.

Regarding the case, therefore, as one in which the injured person was guilty of contributory negligence, or such as would bar his right of recovery against the company, the court thinks that that circumstance affected neither the interpretation of the company's rule nor its legal effect on the agency of the conductor.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, Los Angeles, June 27-30.

Am. Assn. Genito-Urinary Surgeons, New York, May 1-3.
American Dermatological Association, Boston, May 25-27.
American Gynecological Society, Atlantic City, May 23-25.
American Laryngological Association, Philadelphia, May 29-31.
American Neurological Association, Baltimore, May 11-13.
American Orthopedic Association, Cincinnati, May 15-17.
American Pediatric Society, Lake Mohonk, May 31-June 2.
American Society of Tropical Medicine, New Orleans, May 18-19.
American Therapeutic Society, Boston, May 11-13.
Arizona Medical Association, Bisbee, May 2-5.
Arkansas Medical Society, Fort Smith, May 2-5.
Association of American Physicians, Atlantic City, May 9-10.
Connecticut State Medical Society, Hartford, May 24-25.
District of Columbia, Medical Association of, Washington, April 25.
Florida Medical Association, Tallahassee, May 10.
Illinois State Medical Society, Aurora, May 16-18.
Iowa State Medical Society, Des Moines, May 17-19.
Kansas Medical Society, Kansas City, May 3-5.
Louisiana State Medical Society, Shreveport, May 30-June 1.
Maryland, Med. and Chirurgical Faculty of, Baltimore, April 25-27.
Missouri State Medical Association, Jefferson City, May 16-18.
Montana State Medical Association, Butte, May 10-11.
Nebraska State Medical Association, Omaha, May 2.
New Hampshire Medical Society, Concord, May 11-12.
North Dakota State Medical Association, Fargo, May 9-10.
Ohio State Medical Association, Cleveland, May 9-11.
Oklahoma State Medical Association, Muskogee, May 9-11.
Texas, State Medical Association of, Amarillo, May 9-11.
Washington State Medical Association, Spokane, May 9-11.

PHILADELPHIA COUNTY MEDICAL SOCIETY

Regular Meeting, held Wednesday, March 8, 1911

The President, DR. C. B. LONGENECKER, in the Chair

SYMPOSIUM ON NEPHRITIS

The Chemistry of Nephritis

DR. HOWARD T. KARSNER read a paper reviewing the status of the chemistry of nephritis in reference to the metabolism and the urinary changes in the various forms of non-suppurative inflammations of the kidney and presenting the chemistry of uremia and edema. The paper will appear in THE JOURNAL.

Symptomatology and Diagnosis of Nephritis

DR. JOHN F. RODERER: Bright's disease in my opinion should be divided into: (1) parenchymatous nephritis, (2) the so-called chronic interstitial nephritis. Parenchymatous nephritis, which is essentially a disease of the kidneys, is divided into the acute and chronic forms, and the principal diagnostic symptoms are connected with the urine. The diagnosis of chronic interstitial nephritis can be made, I believe, without any examination of the urine, by the continued high blood-pressure caused by the diseased blood-vessels, and the altered function in the heart, eye, kidneys and other organs, the result of the diseased arteries and high-blood pressure. I am convinced that the condition called chronic interstitial nephritis is not essentially or primarily a disease of the kidneys, but an inflammatory disease of the arteries, possibly principally the terminal arteries. Chronic arterial fibrosis would be a better term. It is true that in this disease the kidneys become affected, but so may every other organ of the body. I am of the opinion that the retention of urea in the system in this disease acts only as an overdose of opium, and that uremia is given credit for some of the symptoms to which it is not entitled. The disease of the blood-vessels and the high blood-pressure will explain all the other symptoms. The brain as well as the kidneys suffers in this disease. The heart suffers most. The disease is insidious in its onset, and may exist for years without giving rise to serious symptoms. A patient may consult the physician for indigestion, headache, failing vision, shortness of breath on exertion, or a general lassitude, and any one of these symptoms may be the first evidence of the disease. Given any one of these symptoms in a patient past middle life engaged in mental labor, and inclined to worry, a thorough examination should be made. The eye is the one organ which will confirm the existence of this disease long before the evidence is shown by the kidneys. There may be normal vision with the presence of retinal lesions.

Operative Treatment of Bright's Disease

DR. MORRIS BOOTH MILLER: In my opinion, the question resolves itself somewhat as follows: First, there is no scientific justification for the assumption that surgery, or anything else, can cure nephritis once it is established. Second, the majority of the theories which have been advanced to warrant surgical interference have not been very convincing, to say the least. A constantly growing mass of clinical data, which is deserving of the closest scrutiny, tends to show, however, that the physiologic cure of Bright's disease through remission may be brought about by operation. Despite an immediate mortality of about 30 per cent., and a mortality of 44 per cent. within a short period, the results of the operative treatment have been hopeful when the desperately ill condition of many of these patients is taken into consideration. The reported cases, now running into many hundreds, show a striking number of recoveries, some of which can only be described as brilliant, and it is not surprising that nearly three-fourths of the surgeons who have expressed opinions are favorably disposed and satisfied with their results. I believe that nephrotomy in these cases does good and often saves life, because it does, and does abruptly and thoroughly, certain things which are within the mental horizon of every medical student whenever he thinks of nephritis. I believe that cutting down on the kidneys accomplishes all the purposes of cupping and bloodletting, and does it better, because it tends to relieve the disturbance at its focal point. Just as in intestinal obstruction the sympathetic nerve impulses create violent peristalsis to overcome the obstruction, so we may have in anuria and uremia intense local vasomotor efforts to overcome the renal block. Furthermore, the removal of the capsule seems wise. No man can say just what part is played in a case of suppression by the edema within the kidney itself, and decapsulation certainly offers an outlet. For this reason I believe with Harrison that drainage should always be done in these cases. There may be other explanations for the value of surgical interference in restoring renal equilibrium based on more precise knowledge of urinary physiology, but for the present these seem sufficient. It is in cases in which hypertension, local and general, and edema are the predominant phenomena that the most successful results have been obtained, while the least satisfactory subjects for the knife have been those whose kidneys were caught in the death-grip of interstitial change. Particularly apt has been the operation in saving life in the severe form of nephritis complicating and following the actue exanthemata, of which scarlatinal nephritis may be mentioned as a type. The results in chronic parenchymatous and, to a minor extent, in diffuse nephritis, have been less satisfactory. Those cases in which the cardiovascular changes are marked are the least favorable of all. Nephritis is and must remain a medical entity, and it is not until medical measures have been given a fair trial and have failed that we are justified in considering surgery. When that time comes, the following fairly well-defined principles may be borne in mind for guidance in the individual case: First, operation may be hopefully done in acute nephritis; second, young patients are the best subjects; third, there is sound reason for operating for anuria or uremia occurring in chronic nephritis; fourth, operation may be resorted to as a last desperate chance in any form of nephritis.

DISCUSSION

DR. HENRY K. PANCOAST: The use of the *x*-ray examination in connection with kidney disease is rather closely limited to the diagnosis of calculus in the kidney or ureter, and to the determination of alterations in the position or size of the kidney. Considering the number and variety of the factors that may affect the accuracy of the *x*-ray diagnosis, it is almost remarkable that the percentage of error is as low as it is. Fortunately, the most frequent sources of trouble may be overcome, guarded against or eliminated. The various sources of error may be classified in somewhat the following manner: Obesity; inadequate preliminary preparation of patient; conditions of the abdomen or pelvis which offer shadows of unusual density; surgical dressings, drainage tubes, etc.; the presence of unusual conditions causing shadows that may simulate those of stones in the kidney or upper portion of the ureter; misplaced or supernumerary kidneys or ureters; conditions or objects which may, by their shadows, lead to error or confusion in the diagnosis of calculus in the lower portion of the ureter; certain anatomic structures, as in the case of stones obscured by the shadows of the pelvic bones and the lower ribs; the consistency of the calculus; lack of adequate clinical knowledge of the case on the part of the examiner. The fact should not be overlooked that it is possible for a stone to be present without producing a perceptible shadow on the radiograph, because pure uric-acid calculi possess such a slight degree of density that they may not produce a distinguishable shadow in any but a thin individual. The modern technic of the examination for renal calculus requires some knowledge of the clinical aspect of the case on the part of the examiner, and the physician who refers the case adds to the possibility of error in failing to supply the necessary data. As a further safeguard against mistakes, it is wise to confirm the findings of a positive examination before submitting the patient to an operation for the removal of a calculus.

DR. B. A. THOMAS: Until we learn more about the kidney along the line of physiologic chemistry, I think not much advance will be made in the investigation of this disease.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

April 5

1 Disorders of the Stomach and Duodenum, Especially Ulcers. W. J. Mayo, Rochester, Minn.
2 Duodenal Ulcer. F. W. White, Boston.
3 Present Treatment of Gastric and Duodenal Ulcer. A Review of the Recent Literature on the Subject. C. Frothingham, Jr., Boston.
4 Indications from a Medical Standpoint for Operative Procedures in the Presence of Chronic Gastric Symptoms. M. V. Tyrode, Boston.

New York Medical Journal

April 8

5 Growth and Development of the Training School for Nurses of the New York Hospital. G. L. Peabody, New York.
6 Study of Fats and Lipoids in Animal Tissue. J. Wright, New York.
7 Nervous Affections in Relation to the Adjustments of the Eyes. G. T. Stevens, New York.
8 Psycho-Analysis as a New Therapeutic Procedure in Psycho-Neuroses. A. Gordon, Philadelphia.
9 Ozone. M. W. Franklin, Schenectady, N. Y.
10 Sodium Cacodylate in Syphilis. O. L. Suggett, St. Louis.
11 Id. H. A. Schirrmann, Portsmouth, Ohio.
12 Rabies. J. A. McLaughlin, New York.
13 Morphinism and Morphinomania. F. McK. Bell, Ottawa, Canada.

Lancet-Clinic, Cincinnati

April 1

14 *A New Principle in Treatment of Hyperthyroidism. G. W. Crile, Cleveland, Ohio.
15 *Blood-Findings in Lymphatic Leukemia. H. L. Woodward, Cincinnati.
16 Indications for Nephrectomy. E. O. Smith, Cincinnati.

14. Abstracted in THE JOURNAL, Oct. 1, 1910, p. 1220.

15. Blood Findings in Lymphatic Leukemia.—In Woodward's case the left axillary lymph nodes became swollen and suppurated three years ago. They were incised; following this they remained enlarged. One year ago the glands of the right axilla became enlarged also, and soon after those of the neck and groin began to enlarge. In April, 1909, the patient, a woman of 65, was confined to bed for one week, with fever ranging from 100 to 101 F. She complained chiefly of weakness. On May 23, 1909, a blood examination gave the following results: hemoglobin, 48 per cent. (Dare); reds, 2,880,000; whites, 781,000; differential count of 1,000 white cells gave small lymphocytes, 98.6 per cent., 770,060 per c. mm.; large lymphocytes, 0.9 per cent.; 7,030 per c. mm.; polynuclear nutrophiles, 0.5 per cent., 3,900 per c. mm. No nucleated reds were seen in counting 1,000 whites, but careful later search showed a very few. Color index was 0.84. Fowler's solution was started at once, 3 drops, later increased to 10 drops, being given, thrice daily. December 10, 1909, just two weeks before death the blood examination was as follows: hemoglobin, 35 per cent. (Dare); reds, 2,600,000; color index, 0.67; whites, 1,406,000. Differential count of 1,000 whites: small lymphocytes, 7.8 per cent., 109,670; polymorphonuclear neutrophiles, 1.3 per cent., 18,280; transitionals, 0.1 per cent., 1,400. Two normoblasts seen in counting 1,000 whites, or 2,800 per c. mm.

A study of the blood in this case is of interest from several standpoints. On the day of the first examination, May 23, it gave the typical picture of a chronic lymphatic leukemia, the tremendous increase in the small lymphocytes being the most marked feature. Most of these cells were smaller than the red cells, had almost no cytoplasm, and their nuclei stained very deeply with Wright's stain; a smaller number were about the size of a red cell, or slightly larger; they had a somewhat greater amount of cytoplasm, which was very faintly blue, and a deeply-staining nucleus, not quite so dark as the first variety. A third variety of small or intermediate lymphocytes, slightly larger than the red cells, showed a narrow rim of cytoplasm which had taken the stain more deeply than the nucleus, which was concentrically placed and stained light blue; it frequently showed a nucleus. Numerous irregular masses, stained a purplish-blue, were undoubtedly small lymphocytes of the larger varieties which were artificially broken down in making the smears, for they were not seen in the first preparations and were much less numerous in thick smears than in thin ones. The large lymphocytes were only present in very small numbers in this first preparation, and differed only in size from the last-named varieties. Polymorphonuclear neutrophiles were present only in very small numbers, being absolutely as well as relatively decreased. The red cells showed a picture of a moderate anemia of the secondary type, the cells being practically normal in appearance, though somewhat paler than normal. A very few normoblasts were found after prolonged search. On December 10 the white cells had increased in numbers enormously, 1,406,000 per c. mm., the highest white count of which Woodward has found any record in the lymphatic type. The character of the cells had changed also. The large forms of lymphocytes were much more numerous, relatively and absolutely, than in any of the previous specimens. They had, as a rule, a large nucleus rather faintly stained, with a broad surrounding mass of cytoplasm staining only slightly. The small lymphocytes were mostly of the larger types also. One large lymphocyte was seen with a double nucleus, each portion of which showed a nucleolus. Some of the larger lymphocytes were vacuolated. The red blood-count remained almost stationary throughout. Nucleated reds were very rare except in the last count, when 2 were seen in counting 1,000 white cells. The hemoglobin index was persistently minus, except during a reactionary period in September, when it was 1.26, and in the next examination, when it was 1.11. None of the rod-shaped bodies, described by Auer and Ottenberg in acute leukemia, were found in any of the lymphocytes.

Wisconsin Medical Journal, Milwaukee

March

17 Rabies in Wisconsin. M. P. Ravenel and B. W. Hammer, Madison.
18 The Smith Operation for Extraction of Cataract in the Capsule. G. I. Hogue, Milwaukee.
19 Reconstruction of the Bile Ducts. A. S. Sullivan, Madison.

20 Value of Blood-Cultures in Puerperal Fever. J. S. Evans, Madison.
21 Development and Value of the Blood Culture in Typhoid. G. C. Ruhland, Milwaukee.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

March

22 Physiologic Action of Sodium Chlorid. D. R. Joseph and S. J. Meltzer, New York.
23 Distribution of Hemolysins, Agglutinins and Poisons in Fungi, Especially the Amanitas, the Entolomas, the Lactarius and the Inocybes. W. W. Ford, Baltimore.
24 *The Site of Action of Strychnin in the Spinal Cord. A. H. Ryan and H. McGuigan.
25 *Control of Strychnin Poisoning by Intratracheal Insufflation and Ether. T. S. Githens and S. J. Meltzer, New York.
26 Inhibitory Action of Sodium Chlorid on the Phenomena Following the Removal of the Parathyroids in Dogs. D. R. Joseph and S. J. Meltzer, New York.
27 Physiologic Studies in Anaphylaxis: Microscopic Study of the Anaphylactic Lung of the Guinea-Pig and Mouse. W. H. Schultz and H. E. Jordan.

24. Site of Action of Strychnin.—It was found by the authors that when the lower half of the spinal cord is poisoned by the transfusion method, spasms confined entirely to the lower half of the animal occur when the skin of that region is stimulated. The spasms then become spontaneous in the lower half of the animal. As the poisoning increases the spasms become general, occurring in the upper unpoisoned half when the lower half is stimulated. Spontaneous general spasms then ensue. If at this stage the spinal cord is cut at a level just between the poisoned and unpoisoned portions the spasms cease in the upper half of the animal while they continue below, indicating that the upper half is unpoisoned. An injection of strychnin subsequently into the upper part of the animal again throws it into spasms. If the poisoning be more gradual, as obtained by directly applying strychnin to the spinal cord in different regions, the symptoms of strychnin poisoning are slower to develop and stages intermediate to those just described occur, beginning with exaggerated reflexes and ending with spontaneous spasms, but always localized in the beginning to the poisoned region. Later symptoms are manifested in unpoisoned regions. In an animal in a state of complete general strychnin poisoning, occlusion of the aorta was, of course, followed by a disappearance of symptoms below the point of occlusion.

After the aorta was released, a time came when stimulating the skin above the point of occlusion was followed by general spasms (both upper and lower limbs) while stimulating similarly below the point of occlusion gave absolutely no response. When either the lumbar or the cervical region of the spinal cord is poisoned with strychnin an increase in the excitability of the poisoned area is observed when the corresponding area of the motor cortex is stimulated. The same result is obtained if the posterior roots in the poisoned area are severed. If strychnin is applied to the cervical region of the cord until that region is thoroughly poisoned so that stimulation of the skin of that region causes a general spasm, and then all of the posterior roots are severed, it is found that stimulation of the fore leg area of the cerebral cortex will cause a spasm of the fore legs but none elsewhere. The stimulus required to bring about this result is weaker than that required in the beginning to cause a mere twitch, and is also weaker than that required to cause a twitch of the hind leg on stimulation of its center in the cortex at the time the cervical region is poisoned.

25. Control of Strychnin Poisoning.—On the basis of their experimental experience it seems to Githens and Meltzer that ether anesthesia, intratracheal insufflation and intravenous infusion of Ringer's solution, offers a very effective method of treatment for strychnin poisoning in animals. They see no reason why it should not be available also in cases in human beings.

American Journal of Urology, New York

February

28 The Normal and Pathologic Posterior Urethra and Neck of the Bladder. L. Buerger, New York.
29 Massive Destruction of the Urethra After a Succession of Attempts to Restore It in a Case of Hypospadias. G. A. DeS. Saxe, New York.
30 Sexual Neurasthenia: Its Local and Hydrotherapeutic Treatment. M. Porosz, Budapest.
31 Catheter Left in the Deep Urethra and Bladder After Operation of External Urethrotomy. H. J. Scherck, St. Louis.
32 Massage of the Prostate. G. Greenberg, New York.

American Medicine, New York

March

33 A Morning at Bier's Clinic in Berlin. H. G. Watson, New York.
34 Quinin: Its History and Preparation of Its Alkaloids. J. J. Sheridan, New York.
35 The Oral Laboratory. C. E. Field, New York.
36 An Appeal to All Men of Honor of the Medical Profession of America. A. Rose, New York.
37 Posttyphoid Bone Abscess. H. Lilienthal, New York.
38 Colds and Catarrh. I. M. Heller, New York.
39 Dosage to Effect. W. F. Waugh, Chicago.
40 Action of Animal Extracts on Intestinal Movements. I. Ott and J. C. Scott, Philadelphia.
41 The Dispensary Evil and Its Consequences. W. G. Wulfahrt, New York.
42 *A Tonsillotome Improvement. T. H. Shastid, Marion, Ill.
43 Sir Walter Raleigh's "Royal Cordial." J. Knott, Edinburgh, Scotland.

42. A Tonsillotome Improvement.—This is an ordinary Mathieu's tonsillotome with an improvement consisting in two anterior pillar hooks, or retractors, ⅜ of an inch in length, either straight or very slightly curved, probe-pointed, and soldered to the anterior margin of the fenestra on the side of the instrument opposite to the impalement-fork—in other words, on the side next the wall of the throat. The hooks diverge somewhat as they leave the instrument, being 4/8 of an inch apart where soldered to the tonsillotome and ⅝ of an inch apart at their probe-pointed extremities. These hooks or retractors are used in the following manner: The anterior pillar is of course, if necessary, first thoroughly separated from the tonsil, and then, the tonsillotome having been introduced into the throat, first the lower hook, or retractor, and then the upper, is inserted into the space between the pillar and the tonsil. The instrument is slightly drawn forward, and then the instrument is pressed round the tonsil, and the ablation completed in the customary manner.

Memphis Medical Monthly

February

44 Treatment of Acute Suppurative Otitis Media. W. L. Simpson, Memphis.
45 The Clinical Side of Fibroid Tumors of the Uterus, with a Brief Description of the Perfected Operation for Cure of This Condition. F. D. Smythe, Memphis.
46 Treatment of Fibroid Tumors of Uterus. W. T. Black, Memphis.
47 Pathology, Degeneration and Complications of Uterine Fibroids. O. S. McCown, Memphis.
48 Technic of Cholecystotomy. J. A. Crisler, Memphis.

Annals of Surgery, Philadelphia

April

49 *Injury as a Causative Factor in Cancer. W. B. Coley, New York.
50 *The Abduction Treatment of Fracture of the Neck of the Femur in Elderly Subjects. R. Whitman, New York.
51 *Fractures of the Shaft of the Femur with Marked Displacement. R. H. Harte, Philadelphia.
52 *Fracture of the Patella. E. G. Alexander, Philadelphia.
53 *Nephro-Ureterectomy. H. Lilienthal, New York.
54 Technic of Operative Treatment of Appendicitis. A. B. Johnson, New York.
55 *Diverticulitis of the Rectum. H. Z. Giffin, Rochester, Minn.

49. Abstracted in THE JOURNAL, Jan. 14, 1911, p. 142.

51. Fracture of Shaft of Femur.—Harte suggests finding out all that is possible about the seat of the fracture by the use of carefully prepared Roentgen-ray plates, the pictures to be taken at various angles. The operator should consider carefully what method is likely to give the best results. When the fragments are exposed, the diameter of the bone should be determined with a pair of calipers. In no case should the screws penetrate the opposite side. Suitable instruments, proper drills and screws, and competent assistants should be at hand so that the operation can be completed quickly and with as little destruction to the soft parts as possible. Before closing the wound the operator should see that it is thoroughly dry and that all dead spaces are obliterated, so that there will be no possible chance for the development of a small hematoma, which is so conducive to later infection.

52. Fracture of the Patella.—The point emphasized by Alexander in the operative technic is the advantage of the silver wire. Out of thirty cases that he has been able to follow, four refractured the patella; three of these were sutured with absorbable material. The one that refractured with wire was due to a fall downstairs, and so great was the strain thrown on the patella, that the wire cut through the upper fragment.

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He regards silver wire as the most aseptic and at the same time the strongest suture material that can be used. The only disadvantage is that it occasionally has to be removed. Removal was necessary in three cases in this series. This undoubtedly can be avoided, provided no infection occurs, but even if skin infection—the most common in this operation—does occur, if the skin incision is well away from the line of the fracture, and if the ends of the wire are not left too long and are well covered by the tendon, fascia lata and prepatellar bursa, removal of the wire may not be necessary. If the wire has to be removed, however, it can easily be done with little inconvenience to the patient. That wire causes softening of the bone around the opening is highly improbable unless some infection occurs. Wire is certainly no more irritating than any other material used in these cases, as kangaroo tendon, chromic gut, or even, as has been used, silkworm gut.

53. **Nephro-Ureterectomy.**—Lilienthal describes a new method of operating which he devised.

55. **Diverticulitis of the Rectum.**—Giffin reports two cases in which operation was done. In one there was carcinomatous degeneration.

Journal of the Oklahoma State Medical Association, Muskogee

March

56 The Obliterated Appendix; Its Pathologic and Clinical Significance. A. L. Blesh, H. Reed and C. E. Lee, Oklahoma City.
57 The Medical Secret and Venereal Diseases. M. A. Warhurst, Sylvian.
58 Empyema. D. E. Broderick, Kansas City, Mo.
59 Thermogenesis. G. H. Thrailkill, Chickasha.
60 Physical Characteristics of the Negro. A. C. Hirshfield, Norman.
61 Cardiac Murmurs and Their Clinical Significance. L. J. Moorman, Oklahoma City.

New Orleans Medical and Surgical Journal

March

62 Importance of Regulating Diet in Treatment of Disease. A. Eustis, Abbeville, La.
63 Extirpation of the Lachrymal Sac. T. J. Dimitry, New Orleans.
64 Biography of Dr. Gordon King. O. Dowling, New Orleans.
65 Vocal Rest—Formol and the Galvano-Cautery in Treatment of Laryngeal Tuberculosis. H. Dupuy, New Orleans.
66 A New Method (Yankauer's) of Local Anesthesia in Tonsillectomy. A. L. Weil, New Orleans.
67 Mechanotherapy in Diseases of the Ear, Nose and Throat. O. Joachim, New Orleans.
68 Diphtheria in Children. E. M. Toler, New Orleans.

April

69 Obstinate Bone Cavities. W. M. Perkins, New Orleans.
70 *The Phenolphthalein Test for Occult Gastro-Intestinal Hemorrhage. J. A. Storck, New Orleans.
71 The Motais Operation as Performed at the Eye, Ear, Nose and Throat Hospital, New Orleans. T. J. Dimitry, New Orleans.
72 Present Status of Bacterial Vaccines and the Four Leading Serums. F. O. Northey, New Orleans.
73 A Very Severe Case of Lobar Pneumonia, with Delayed Resolution and Treatment Used. G. McG. Stewart, Laurel Hill, La.
74 Treatment of Pneumonia with Aconitin. J. T. Abshire, Leroy, La.
75 Tetanus Statistics. J. D. Bloom, New Orleans.

70. **Phenolphthalein Test.**—In his observation of the phenolphthalein test, Storck noted that whenever it gave a positive reaction, the benzidin test also proved positive. The benzidin test several times showed a positive reaction when the phenolphthalein, guaiacum and aloin tests were negative. In the experiments, from 2 to 5 c.c. of blood had been given once daily for forty-eight hours previous to the application of the test. It was found that when more than 15 c.c. of blood were ingested in forty-eight hours the phenolphthalein test always proved positive, but the guaiacum and aloin test often failed.

Denver Medical Times and Utah Medical Journal, Denver

March

76 Treatment of Inoperable Cancer of the Uterus. E. Lanphear, St. Louis.
77 Pregnancy with Unruptured Hymen and Vaginal Atresia. A. M. Ditson, Denver.
78 The Usual Care of Obstetric Cases at Mercy Hospital. T. M. Burns and J. C. Hutchison, Denver.
79 Obstetrical Complications. E. Stuver, Fort Collins, Colo.
80 Non-Surgical Treatment of Retrodisplacements of the Uterus. G. L. Monson, Denver.
81 Prevention of Blindness. F. Stauffer, Salt Lake City.
82 The Menopause. W. E. Waugh, Chicago.
83 Cancer as Known To-Day. I. Levin, New York.
84 Compulsory Notification of Venereal Disease. F. Clift, Salt Lake City.

Maryland Medical Journal, Baltimore

April

85 Korsakow's Syndrome—Cerebropathia Psychica Toxemica. A. P. Herring, Baltimore.
86 Reduction of Blood-Pressure by Phlebotomy—in Emergency. G. Timberlake, Baltimore.
87 Develop Sewerage Systems. W. J. Todd, Baltimore.
88 Ventilation of Schoolrooms. C. W. G. Rohrer, Baltimore.

Interstate Medical Journal, St. Louis

March

89 Bearing of Old and New Facts on Conceptions of Cardiovascular Disease. H. A. Hare, Philadelphia.
90 Autoserotherapy: Therapeutic Use of the Patient's Own Serous Exudates and Transudates. I. I. Lemann, New Orleans.
91 Present Status of Pneumonia. H. G. Beck, Baltimore.
92 The Use and Abuse of Tuberculin. W. V. Voorsanger, San Francisco.
93 Report and Analysis of a Goiter with Marked Intrathoracic Extension. N. W. Sharpe, St. Louis.
94 Salvarsan in Three Rebellious Cases of Syphilis. E. D. Holland, Hot Springs, Ark.
95 Primary Carcinoma of the Appendix. M. W. Myer, St. Louis.

Journal of Experimental Medicine, Lancaster, Pa.

April

96 *A Sarcoma of the Fowl Transmissible by an Agent Separable from the Tumor Cells. P. Rous, New York.
97 Treatment of Yaws (Frambesia) with Salvarsan. R. P. Strong, Manila, P. I.
98 *Cultivation in Vitro of the Thyroid Gland. A. Carrel and M. T. Burrows, New York.
99 *Cicatrization of Wounds in Vitro. E. S. Ruth, New York.
100 *Transfusion and the Question of Intravascular Agglutination. R. Ottenberg, New York.
101 Changes in Nitrogenous Metabolism After Parathyroidectomy. J. V. Cooke, New York.
102 Observations and Experiments on the So-Called Thyroid Carcinoma of the Brook Trout and Its Relation to Endemic Goiter. D. Marine and C. H. Lenhart, Cleveland.

96. A paper based on the same observations by the same author was published in THE JOURNAL, Jan. 21, 1911, p. 198.

98. **Cultivation in Vitro of the Thyroid.**—Since Sept. 22, 1910, the authors have cultivated the thyroid gland from mammals, many times. Small fragments of the gland were extirpated from living and anesthetized dogs, cats and guinea-pigs, and cultivated in the plasma obtained from the same animal or an animal of the same species. These cultures are distinguished as autogenic and homogenic. In all, they have now made fifteen series of cultivation experiments with the gland, each of the series being composed of from four to thirty separate cultures. The proliferated elements consist of connective tissue and epithelial cells, the former predominating. The cells survive in cultures for two weeks or longer, which period can be increased by secondary and sometimes tertiary cultivations. The authors call attention to the fact that the method of growing *in vitro* organs such as the thyroid may come to be used with advantage in the study of the substances concerned with the internal secretion of certain glands.

99. **Cicatrization of Wounds in Vitro.**—The process of the healing of a wound outside the body has been observed and recorded by Ruth in five experiments. The method of study consisted of making an incision or a rectangular wound in the middle of a small fragment of skin and cultivating it outside the body in a drop of plasma. The reparation consists of three mechanisms: the sliding of the epithelium from the edges of the wound into the open space, the epidermization and the progressive contraction of the original edges of the wound.

100. **Transfusion.**—This paper offers a solution of a special problem in isoagglutination; namely, the question whether transfusion is permissible between persons whose sera agglutinate the red blood-cells of each other. It also shows why such transfusions are not regularly followed by serious symptoms. Ottenberg found that intravascular agglutination can occur, and is the probable cause of occasional untoward symptoms, or even death, following transfusion of agglutinative blood. In the majority of cases, however, it does not occur, or if it does, it causes no symptoms. This is dependent on the influence of three factors: (1) concentration of the agglutinin; (2) absorption of the agglutinin by an excess of agglutinable cells; (3) interference with agglutination by an excess of non-agglutinable cells, so that when clumps occur they are microscopic in size. If, for a given transfusion, a non-agglutinative donor, i. e., a donor whose blood is of the same agglutinative class as the patient's, cannot be obtained, then

it is safer to use a person whose serum is agglutinative toward the patient's cells than one whose cells are agglutinated by the patient's serum. Ottenberg suggests that tests for agglutination as well as for hemolysis, ought to be made before transfusion. When time does not permit this, one has to weigh the possible dangers of agglutination or hemolysis against the dangers of letting the patient go without transfusion. Agglutinable cells when transfused are taken up by the phagocytes in the patient's blood; and, for this reason, the transfusion of agglutinable blood, even when no accident happens, can be expected to do little permanent good.

Ophthalmic Record, Chicago

March

103 Acute Retrobulbar Neuritis Caused by an Intestinal Toxemia. F. P. Calhoun, Atlanta, Ga.
104 Excretion of Hexamethylenamin into the Anterior Chamber of the Eye. H. S. Gradle, Chicago.
105 Two Cases in which the Roentgen Ray Failed to Locate a Foreign Body Afterward Shown to Be Present in the Eye. R. L. Randolph, Baltimore.
106 Treatment of Scleritis and Pterygium. E. R. Carpenter, El Paso, Texas.
107 Conjunctivitis with Ulceration of the Cornea, Due to the Bacillus Pyocyaneus. H. McKee, Montreal.
108 Congenital Pigmentation of the Cornea. H. V. Tweedie, Baltimore.
109 A Case of Herpes Zoster Ophthalmicus. W. T. Wallace, Berlin, Ontario.
110 Mixed Irregular Astigmatism Following Injury to the Eye. R. S. Lamb, Washington, D. C.
111 Toxic Paralysis of Accommodation. H. F. Hansell, Philadelphia.
112 An Expensive Pocket Transilluminator. H. Lowell, Boston.

Kentucky Medical Journal, Bowling Green

April 1

113 Conservative Surgery. I. Abell, Louisville.
114 Gall-Stones. B. F. Van Meter, Lexington.
115 How Shall We Improve Public Health Matters in the County? S. Griffin, Henderson.
116 Natural Defenses of the Body. D. O. Hancock, Henderson.
117 Hysteria: Its Symptoms, Etiology, Prognosis and Treatment. J. C. McCreary, Cave City.
118 Minor Eye Troubles. T. O. Helm, Bowling Green.
119 Management of Acute Appendicitis. P. C. Layne, Ashland.
120 Appendicitis. W. K. Smith, Adairville.
121 Typhoid. J. E. Payne, Paducah.
122 Chronic Rhinitis. H. C. Beazley, Hopkinsville.
123 Atropin: Its Physiologic and Therapeutic Effect. E. Harthill, Pewee Valley.
124 The Courteous Physician. W. Salin, Owenton.
125 A Plea for an Early Diagnosis of Pulmonary Tuberculosis. E. Morris, Sulphur.
126 Prostatic Hypertrophy. A. P. Dowden, Eminence.
127 *Treatment of Dysentery. P. F. Barbour, Louisville.
128 Congenital Absence of the Genital Organs, Including the Clitoris and Vagina. A. H. Barkley, Lexington.
129 Vis Medicatrix Naturæ. D. G. Simmons, Adairville.
130 Tonsillectomy: The Tonsils and Their Removal. W. S. Gabhart, Mackville.
131 Can Typhoid be Aborted? W. W. Lasley, Lewisburg.
132 Placenta Prævia. D. G. Simmons, Adairville.
133 The Onward Movement in Medical Organization. B. F. Fyke, Springfield, Tenn.
134 Pseudomembranous Croup. T. C. Nichols, Morgan.
135 Splenic Leukemia. E. D. Sellers, Fisherville.

127. **Treatment of Dysentery.**—After castor oil has been given and the bowels thoroughly moved, Barbour says that some astringent like bismuth subnitrate may be prescribed, 10 grains every two hours until the stools are dark and the frequency diminished. If the stools are not discolored by the bismuth then he would give zinc sulphocarbolate in ½-grain doses every two hours. If there is no fever then small doses of Dover's powder may be given, but usually will not be found necessary if there has been a thorough emptying of the bowels. When there is blood in the stools, bichlorid of mercury, in 1/150-grain doses should be given every two hours until the stools show some bile, when the bismuth may be substituted. For the cramping, the tormina and tenesmus hot applications over the stomach will give great comfort. Hot flaxseed or a glycerinized paste will be helpful. Warm enemata will help relieve the straining, sometimes starch and laudanum eases those cases in which the rectum is very congested and apt to prolapse with the stool. Occasionally, suppositories containing opium and belladonna will quiet this intense activity. Or the official liquor antisepticus alkalinus well diluted with warm water as a colon douche will deplete the inflamed area. With more extensive experience Barbour has grown to use the astringents less and less, for the removal of the fermenting and putrefying mass from the bowel has nearly always stopped the diarrhea. To gain this end the following prescription has been found very useful by him:

℞	gm. or c.c.	
Olei ricini	8	3ij
Pulveris acaciæ	q. s.	or
Syrupi rhei aromatici	30	ʒi
Misturæ cretæ q. s. ad	60	ʒii

M. Fiat. emulsio. Sig. One teaspoonful every two hours.

When the character of the stools show that the upper bowel has been unloaded there will be a great improvement in the condition of the child. Then the astringents may be administered with benefit but will not always be found necessary.

Washington Medical Annals

March

136 Progress of Gynecology in 1910. J. W. Bovée, Washington, D. C.

Medical Fortnightly, St. Louis

March 25

137 Influence of the Mind on Health and Disease. L. H. Lanier, Kansas City, Mo.
138 Gases in Their Relation to the Body. A. L. Benedict, Buffalo, N. Y.
139 Abortive Treatment of Gonorrhea. W. R. Jamieson, Torreon, Coah., Mexico.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

March

140 Acromegaly: Pierre Marie's Disease. P. E. Launois and M. H. Cesbron, Paris, France.
141 Scope and Value of the Blood-Pressure Test. F. A. Faught, Philadelphia.
142 Etiology and Treatment of Gout. A. Bassler, New York.
143 Effect of Alcohol on the Heart Muscle. A. W. Downs, Philadelphia.
144 *Use of Oxygen Baths. A. Bernheim, Philadelphia.
145 *The United States Pharmacopeia. M. H. Fussell, Philadelphia.
146 The Metric System. E. H. Long, Buffalo, N. Y.

144. **Oxygen Baths.**—The use of the oxygen bath in a great variety of affections is advocated by Bernheim. He says that in addition to exercising a powerful suggestive influence, the oxygen bath exerts an effect on the innervation as shown by its removal of parasthesias, its soporific property, and its general sedative and indirectly stimulating action. It assists the circulation, deviating the blood from the skin and doubtless from the viscera, very probably to the skeletal muscles. It reduces excessive blood-pressure and the frequency of the pulse as well.

145. **United States Pharmacopeia.**—Fussell protests against the presence in the Pharmacopeia of such combinations as pulvis acetanilidi compositus. The best method of prescribing acetanilid and caffein is to give to each individual for whom these drugs are used the dose necessary for that individual, and for the particular condition present at the time the patient is seen. This cannot be done if a fixed formula is used, even though, of course, one may use different doses at different times. It is manifestly impossible for anyone to tell before a case is seen just what dose of the drug is necessary. To advise the use of compound remedies is to confirm slipshod, improper methods of prescribing. On this principle, fixed formulas should not be used. If it is not correct principle to use fixed formulas, then they surely should be expunged from the Pharmacopeia.

Still another point made by Fussell is the following: The Pharmacopeia to-day contains certain drugs, their preparations, the method of manufacturing them, their doses, their description, and in certain instances, tests for their purity and assay. As the book stands, therefore, it is manifestly of great use to the pharmacist. Its only use to the general practitioner is the knowledge it gives him of what is supposed to be useful in drugs and their doses. It gives no hint of their indications or contraindications, of their toxic or non-toxic properties. All this knowledge he must perforce get from other books, or from manufacturing chemists. He can get reliable information from the various publications on materia medica or from the dispensatories, and he does get some from these sources; but, sad to relate, most of the information as to drugs which the average physician now obtains after graduation is from manufacturing drug firms, in the form of more or less well-written literature, accompanied by samples and often supplemented by the glib-tongued detail man. Fussell has had described to him the treatment being carried on in certain cases, and has been able to recognize but few of the articles used, because they were prescribed under trade names

of which he was entirely ignorant. One reason why the drug firms, with their literature and instructed agents, are such potent powers in grounding the young physician as to the means he should use in prescribing is because that method is easy and is brought immediately to his attention, whereas the knowledge of materia medica is more or less difficult to attain. Another reason is because the medical schools are not insistent enough in teaching their students that the only proper method to pursue in prescribing drugs after they become practitioners of medicine is to hold fast to that which has been proved of value, and to accept new remedies only after their usefulness has been attested by men of standing by methods of value. Therefore, he continues, if the next issue of the Pharmacopeia is made to contain the therapeutic indications of the drugs recommended for use, it will be of some practical value to the practicing physician. If this should make the volume too bulky, two volumes might be printed; one after the style now in use, and the other to contain the names of the drugs, their description, their dose, and a short description of their therapeutic use.

Vermont Medical Monthly, Burlington

March

147 Practical Points on Diagnosis and Treatment of Diseases of the Upper Abdomen. S. E. Maynard, Burlington.
148 Management of Patients with Sugar in the Urine. C. H. Beecher, Burlington.
149 Principles and Application of Serotherapy and Bacteriotherapy. B. H. Stone, Burlington.

Bulletin of the Manila Medical Society

February

150 *A Case of Masked Tertian Malarial Fever with Marked Mental and Nervous Manifestations and with Unusually Few Parasites in the Peripheral Circulation. W. E. Musgrave, Manila.
151 An Effort on the Part of the Bureau of Health to Improve the Milk Supply of Manila. C. Fox, Manila.

150. **Masked Tertian Malarial Fever.**—At the age of 14, Musgrave's patient had a moderate attack of chills and fever, which recurred at irregular periods for about one year. At the age of 21, he suffered an attack of pleurodynia, following exposure, which kept him in bed for about five days. When 25 years old, he was attacked by bronchitis, which, however, was so mild as not to confine him to bed. At 29 and 31 years of age, there were attacks of influenza, moderate in severity, confining him to bed for about one week in each case. At 35 years of age, he had diarrhea, which lasted for about two weeks and did not incapacitate him for duty. In 1897, there was an attack of intermittent fever ushered in by a chill, two other chills occurring during the first ten days. Malarial parasites were not found. Following this illness, he began to be troubled with palpitation of the heart, shortness of breath on exertion, indefinite rheumatic pains occasionally in the fingers, but no swelling or fever. About this time he began to be troubled with nervousness, inability to think on a definite subject for any length of time, insomnia, and worry over petty details. In July, 1897, he was granted sick leave for nervous debility and rapid heart action; this leave was later extended on other certificates to November. During this time, in addition to periodic attacks of intermittent fever, the general nervous condition failed to improve much and he began to be troubled with a suffocating sense of oppression in the chest and throat. At times there were spells of dizziness. In the fall of 1898, jaundice of a severe type developed and lasted for about four months. The jaundice came on gradually and was accompanied by pain and tenderness over the liver and abdomen. During the latter part of this trouble, chills and fevers developed, lasting for about three days, and a few tertian malarial parasites were found.

From about July 1 to Aug. 12, 1899, there was mild continuous fever. While on sick leave convalescing from this attack, he was exposed to the hot sun for some time and suffered with a recurrence of the old symptoms, insomnia, burning oppressive headache, palpitation of the heart, weakness, general debility and nervousness; and in addition had fever again, which lasted for a week or two, but no chills. His condition again improved and on arrival in the Philippine Islands in October, 1909, his general health was fairly good. The hard duties and the trying climate of the tropics, however, soon caused a return of the old symptoms. The mental phenomena became very marked and the patient made application to be retired on account of mental and physical debility, stating that he believed himself insane. While under observation after this application, he suffered from two attacks of fever, one of them accompanied by jaundice, but malarial parasites were not found. He was finally invalided to America with a diagnosis of melancholia and severe cerebral neurasthenia.

On returning to the United States, he was again placed under observation in one of the large hospitals. While there, he had two or three attacks of fever of an irregular type; but again malarial parasites were not found. He made a second application to be retired for mental and physical disability and the hospital authorities recommended that he be transferred to an insane asylum. Instead, however, he was transferred to the Army and Navy General Hospital, Hot Springs, Arkansas, for further observation and report. On admission, the patient complained of a constant feeling of mental and physical depression and difficulty of concentrating the mind on any one subject, especially on details. Forced thinking in one channel, as in adding a column of figures, gradually weakened the memory so that all track of count was soon lost. All exercise, whether physical or mental, was followed by mental and nervous prostration and physical exhaustion. There was insomnia, mental depression, palpitation of the heart and a suffocating sensation in the chest and throat. Practically nothing was found on physical examination. The patient was fairly nourished and developed; his color was slightly yellow; the general sensation was good; the reflexes normal; the chest negative. There was no apparent enlargement of the spleen, but slight enlargement of the liver and tenderness on deep pressure over the gall bladder. The temperature, pulse and respiration were normal. The red blood-cells numbered 4,020,000, the leukocytes, 6,280; the hemoglobin was 92 per cent. (Fleischl). The differential count showed eosin 0.8 per cent., mononuclears, 2.3 per cent., polynuclears, 75.5 per cent. and irregular cells, 2 per cent. Malarial parasites were not found in fresh or stained specimens. The urine was normal and remained so throughout the five months that he was under observation. The patient did not have diarrhea; but following the hospital custom in cases returned from the tropics, he was given a saline and the stool examined microscopically, but nothing abnormal was found.

After seven weeks in the hospital he had a slight chill one night, which he said was followed by fever and sweat. His blood was carefully examined, but no malarial parasites were found. Following this attack and continuing until the true cause of his trouble was found and removed, he complained constantly of photophobia, which at times was very marked. Seven days after the first chill he had another one at night, which was also followed by fever and sweat as well as by a slight jaundice. Again malarial parasites were carefully sought for but not found. Following this chill the mental and nervous phenomena became more marked and the patient sang, laughed and talked almost constantly for about twenty-four hours. Five days later, there was another chill and the temperature reached 104 F., with more marked jaundice and gastro-intestinal symptoms, including vomiting, slight diarrhea and abdominal pain. The abdominal pain was most marked in the region of the gall-bladder and the patient had not been free from it since the first chill. Malarial parasites were again sought for but not found, either in fresh or in stained specimens. Two days afterward there was another chill similar to the last one, and on this occasion the examination of the blood showed a few—very few—parasites. At this time the patient was in a nervous and mental condition requiring a constant attendant.

Immediately after the finding of the parasites, the patient was put on 1 gram doses of quinin every four hours until marked cinchonism was produced, after which he was kept on 3 grams of quinin daily for fifteen days, when all medication was stopped. Two weeks afterward there was another slight chill and a few parasites were again found. He was then put on a systematic quinin treatment extending over a period of five months, as follows: 3 grams in three doses daily for fifteen days; then 3 grams in three doses on alternate days for one month; then once a week for another month, and finally once every two weeks for at least two more months.

In addition to this treatment, the patient had thermal baths, and iron, arsenic and strychnin. A clearing up of the symptoms was noticed shortly after the quinin treatment was instituted and progressed rapidly. This case is reported somewhat in detail because it is believed to be rare, and because of the injury that was done the patient by a faulty diagnosis which came so near causing him to be incarcerated in an asylum.

Journal of the Delaware Medical Society, Wilmington

March

152 Is Plasmodium Malariæ Conveyed to the Human System Through Any Other Avenue than the Mosquito? J. H. Wilson, Dover.

American Journal of Diseases of Children, Chicago

April

153 Influenzal Meningitis, with Especial Reference to Its Pathology and Bacteriology. D. J. Davis, Chicago.
154 Treatment of Chronic Infantile Paralysis. M. Strunsky, New York.
155 *A Study of Blood-Pressure in Normal Children. M. Michael, Chicago.
156 *Spontaneous Hemorrhage in the New-Born Infant. O. M. Schloss, New York, and L. J. J. Commiskey, Brooklyn, N. Y.
157 *Inflammatory Changes in the Appendix During Early Infancy. G. M. Smith, St. Louis.

155. Abstracted in THE JOURNAL, Feb. 25, 1911, p. 617.

156. **Spontaneous Hemorrhage.**—A review of the literature, and a study of nine cases of spontaneous hemorrhage in new-born infants, serve as the basis of this communication. Schloss and Commiskey have treated seven new-born patients with hemorrhage by subcutaneous injections of human blood. The first patient was treated in April, 1908, with, first, an injection of 20 c.c. of human blood serum, and later, an injection of whole blood. The whole blood was used instead of the serum for the reason that it was easier to obtain and could be used immediately, the time required for the serum to separate being saved. It seemed an additional advantage to inject, not only the serum, but also the formed elements which have influence on the coagulation of the blood. In most cases the blood was taken from one of the parents. The required amount was withdrawn from a vein of the forearm by means of an exploratory syringe and injected immediately into the subcutaneous tissue of the infant's back. Of the seven infants thus treated, six recovered and one died. The fatal case was in an infant who had suffered from multiple hemorrhages for eight days and died three and one-half hours after admission to the hospital. The patient was in a moribund condition when admitted and received only a single injection of 10 c.c. of blood. In five of the six cases in which recovery took place, the hemorrhage ceased soon after treatment, and at the same time there was marked improvement in the general condition. In four cases, the hemorrhage was rather severe and the patients presented all the signs of severe anemia due to loss of blood. One case was of moderate severity. In the remaining case a positive Wassermann reaction was obtained; the hemorrhage was only slightly improved after the blood injections, but ceased after the use of mercurial treatment. Whether the blood injections were of value in this case was difficult to determine. The authors believe that the best results can be expected from the use of human blood or serum. In the four successful cases the curative effect of blood transfusion was immediate, but, they say, this method of treatment must have a rather restricted field. The technical difficulties of transfusion in a young infant are formidable and render the method available only in the hands of a very skilful surgeon.

157. **Changes in the Appendix During Infancy.**—Among 200 appendices examined by Smith, fifteen showed inflammatory changes of varying intensity. The two youngest infants were 13 days and 17 days old, respectively. In nine instances, the age ranged between 20 and 30 days. Four infants were between 1 month and 2 months old. In two instances, the cecum was still in an incompletely descended position, lying between the iliac crest and the liver; but in the remainder of the cases the cecum occupied its usual position in the iliac fossa. Three times the distal part of the appendix was found hanging over the pelvic brim, and in such instances the distal part gave the evidence of severe inflammation. In eight cases, the appendix occupied a position directly behind the cecum and proximal part of the ascending colon. It is in this position of the appendix that in infants sharp angulation frequently occurs. The cause apparently is found in the relatively small retrocolic compartment at the time of birth, to which a relatively large appendix accommodates itself. Thus, the appendix passing upward directly behind the cecum and colon, may be bent sharply downward by the upper limit of the retrocolic space formed by the reflection of the peritoneum from the ascending colon to the iliac fossa or posterior parietes. Under normal conditions, even, fusion of the appendix with the cecum, ascending colon, posterior parietal peritoneum or iliac fossa is frequently found. There may result from these conditions not only a permanent fixation of the sharply bent appendix, but also changes in the form of the mesentery of the appendix, possibly causing circulatory disturbances.

In the majority of the cases reported by Smith, inflammation occurred when the appendix was found sharply bent on itself, lying in close relation with the cecum and colon; and in several instances the inflammation was more marked at the site of angulation than in other parts of the appendix. In three cases, the proximal part of the appendix passed upward, inward and to the left, so that the distal part lay curled behind the mesentery of the terminal coil of the ileum. The last described position of the appendix is that most frequently found in infants, as it formed 50 per cent. of all cases in 1,050 autopsies in infants studied by Smith. It is of interest to note that although the majority of inflammatory changes were found in appendices lying erect directly behind the cecum and colon, this variation in position of the appendix in the infant was found in only about 25 per cent. of all infants. Peritoneal exudate was present in seven cases. Thrombosis of the arteries occurred in the appendix and in the mesentery of the appendix in several instances.

Atlanta Journal-Record of Medicine

March

158 Local Anesthesia. W. L. Cooke, Columbus, Ga.
159 Vaccine Therapy in So-Called Surgical Tuberculosis. L. M. Gaines, Atlanta, Ga.
160 What Are the Indications at Present for Transfusion of Blood? E. G. Jones and D. F. Winn, Atlanta, Ga.
161 Salvarsan. E. G. Ballenger, Atlanta, Ga.

Detroit Medical Journal

March

162 Modern Ideas or Conceptions of Kidney Pathology. A. O. Hart, Maple Rapids, Mich.
163 Treatment of Gonorrhea. N. E. Aronstam, Detroit.
164 Relation of the Physician to the Problem of Nurses for People of Limited Means. C. A. Aikens, Detroit.
165 Prof. Herman Schwartze. E. Amberg, Detroit.

Journal of the Medical Society of New Jersey, Orange

April

166 Salvarsan. H. J. F. Wallhauser, Newark.
167 Tonsillar Hypertrophy: Anatomy, Surgical Treatment and Operative Dangers. R. B. Scarlett, Trenton, N. J.
168 *Can the Future Sex of the Family be Controlled at Will by the Parents? W. W. Kain, Camden, N. J.
169 *Medical Expert Testimony. G. A. Rogers, Newark.
170 What Can We Do for the Betterment of Our Society? W. J. Burd, Belvidere.
171 Salvarsan in Syphilis. N. J. Ramos, Newark.
172 Medical Inspection of Schools. W. J. Lamson, Summit.

168. **Can the Future Sex of the Family Be Controlled?**—Kain agrees with E. R. Dawson that the supplying ovary is in reality the essential factor in the causation of sex. Dawson held that the sex of the fetus is not due to the male parent, but depends on which ovary supplied the ovum which was fertilized, and so became that fetus. He found that a male fetus is due to the fertilization of an ovum that came from the right ovary, and a female fetus is due to the fertilization of an ovum that came from the left ovary.

169. **Medical Expert Testimony.**—Rogers suggests as a remedy for present evils that one or more experts should be jointly selected by the two opposing parties, and that these experts should be paid by both sides. In case the two sides should be unable to agree in their choice, the judge might deliver a casting vote; or each side might choose an expert, and a third might be selected by the two experts originally chosen, or by the court—these three physicians to make a joint report. He suggests further that the medical testimony in any given trial might be reviewed by a special committee appointed for that purpose by the medical council of the local medical society. By this means, a physicians who was found guilty of habitual perversion might be expelled from the society and thus discredited in the eyes of the court.

XUM

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

March 25

1 Ankylostoma Infection. A. E. Boycott.
2 *Traumatic Myositis Ossificans. R. J. Godlee.
3 *Idem. G. H. Makins.
4 Formation of Bone in Periosteum Separated by Injury. A. A. Bowlby.
5 A Case of Poisoning by Tragopogon Pratense, or Goat's Beard. F. J. Smith.
6 A Record of Ninety Diphtheria Carriers. A. G. MacDonald.
7 Grave and Prolonged Cardiac Failure Following the Use of Cocain in Dental Surgery. F. W. Price and A. B. Leakey.
8 *Two Uncommon Forms of Deformity of the Female Generative Organs. J. A. C. MacEwen.
9 Nuchal Lipomata in the Lower Animals. Sir J. Hutchinson.
10 Clinical Aspects of Some Varieties of Excitement. W. T. Munro.

2. **Traumatic Myositis Ossificans.**—One case of this kind is reported by Godlee. A young man had been kicked on the front of the thigh at football. When Godlee saw him there was a very large oval swelling on the front of the lower half of the thigh. It was symmetrical and very hard, except just above the patella, where it fluctuated, and there was only slight pain on movement. There was pain and stiffness for several months. After three months the mass was slightly smaller. It was obviously fixed to the bone. After another month the lump had almost gone, but a skiagram showed that there was then a distinct flake of bone on the front of the femur, fading off above into the surface of the shaft, but ending below in a sharp spicule. Godlee points out that a very large swelling without treatment may diminish so much in size as almost to disappear and cause no further trouble or inconvenience. He raises the question whether this condition should be called myositis, and what is the evidence that it is due to inflammation of muscle. He thinks it more probable that the essential things are, first, an injury to the periosteum, and, second, an effusion of blood; and that the injury to muscle and the inclusion of muscular fibers in the callus are, so to speak, accidental, though they no doubt govern the shape and position of the new mass of bone. In other words, the injury is more analogous to what occurs when periosteum is stripped off in such operations as excision of the elbow, or in the cephalhematomata of infants, in which it is easy to demonstrate true bone at the margins of the clot, or to the formation of provisional callus in simple fractures.

3. **Traumatic Myositis Ossificans.**—Two cases are reported by Makins. The patients were of the same age, came under observation at the same time, and while one was treated by an active method, the other practically recovered spontaneously. Makins maintains that no active treatment should be adopted in the early stages of the condition. The frequency with which two muscles of the body, the quadriceps extensor femoris and the brachialis anticus, are affected seems to Makins to support the theory that the exciting influence is to be referred to bone-forming cells detached from the periosteum. Makins says that in the general line of treatment to be adopted a period of some weeks' complete rest should be maintained during the continuance of the active progress of ossification. When it is judged by clinical observation and Roentgen-ray examination that progress has ceased or that the process is retrogressive, massage and exercise should follow. Operative treatment should only be considered when the process has manifestly come to a definite standstill, and the patient suffers from functional disability which there is a chance of relieving.

8. **Deformity of Female Generative Organs.**—In the first case cited by MacEwen, a woman, aged 46 years, was suffering from symptoms pointing to intestinal obstruction. The abdomen was distended and tender to palpation, particularly over the left iliac fossa, where a large mass was easily detected on palpation, and it was dull to percussion. On vaginal examination, the cervix was found to be normal in position and direction, but small and ill-developed. The uterine sound could not be introduced into the canal, but an ordinary probe went in for about an inch. The fundus could not be detected. The vaginal roof on the left side was occupied by a mass which was tender to palpation, while on the right side a hard rounded mass was detected which projected toward the rectum, and was easily felt in rectal examination. This mass was about the size of a golf ball and was fixed. The peritoneal cavity was opened and a quantity of sanguineous fluid was evacuated. A large tumor, subsequently ascertained to be fibromyomatous, at once presented. This tumor was freely movable, being attached to a pedicle, which had become twisted and was partially gangrenous. The pedicle was ligated down close to what was supposed to be the serous surface of the uterus and the tumor removed. The left Fallopian tube was also in a gangrenous condition and was also removed. The left ovary appeared normal but of small size. On passing the finger down along a course of the rectum a mass was now detected. There was no uterine body present. On the left side there was an ill-developed broad ligament, with the gangrenous tube already mentioned, and fairly normal ovary. On the right side, the appendages seemed to be entirely wanting, while a little to the right of the normal position of the uterus the hard mass referred to presented. It emitted a slightly hollow note when tapped. It consisted of a roughly spherical shell of osseous matter, which contained an oily material at first sight resembling pus. No hairs, teeth or other tissue elements were present. The patient made an uninterrupted recovery save for slight transient jaundice for a few days after operation.

MacEwen expresses the belief that the intestinal obstruction in this case was probably due to the pressure of the fibromyoma on the bowel, but no evidence was obtained of any portion being damaged thereby. This woman had menstruated regularly. In the second case there was an absence of the lower end of the vagina.

Bristol Medico-Chirurgical Journal, London

March

11 Cerebrospinal Syphilis. J. M. Clarke.
12 Defects in the Visual Field. F. R. Cross.
13 Nature and Treatment of Chorea. C. F. Coombs.

Clinical Journal, London

March 15

14 A Case of Spasmodic Torticollis and a Case of Cerebellar Tumor. P. Stewart.
15 Facial Tetanus. W. F. Fedden.

March 22

16 The Weak Heart. W. J. Fenton.
17 *Acute Pneumonia in Children. J. P. Parkinson.

17. **Acute Pneumonia in Children.**—With regard to the general treatment of the disease, Parkinson says that the child should be put to bed, and frequently moved from side to side to allow collapsed areas of lung to expand, for the same reason as a fit of crying is useful now and then. The room should be well ventilated so that oxygen is given in a natural way, though oxygen from a cylinder may be useful in cardiac failure with cyanosis. Bronchitis has to be treated on the ordinary lines, and if there be much secretion an emetic may give relief. Ipecacuanha often fails to produce vomiting, and the author considers a small dose of apomorphin safe and efficacious. Ipecacuanha is much too frequently prescribed, he asserts, for it is useless when there is no bronchitis, and when there is, it is by no means sure that this drug acts favorably. It is also certain, Parkinson says, that it upsets the digestion; it is better, therefore, if the child seems to be getting rid of the bronchial secretion without drugs not to give them unless there is definite indication for their employment. The author has often found a hot mustard bath useful in cases of collapse in young infants; it relieves congestion of the lungs and heart by dilating the peripheral arterioles as well as helping the action of the skin. He insists on disinfection of the mouth and teeth to prevent further infection of the lungs. Alcohol, he says, is not necessary as a routine treatment, but may be very useful, especially in long-continued bronchopneumonias, and in cardiac failure. Brandy, well-matured, has an action far superior to that possessed by the cheaper varieties. The feeding in acute pneumonia is of the greatest importance, and so long as a child takes its food all goes well; one of the earliest signs that cause anxiety is failure of the appetite. An important rule is, more water and less food than in health. It has been found from examination of the digestive ferments in children suffering from acute disease that the peptonizing power of the stomach and pancreas is very weak. Emulsifying powers are real or absent. The greatest activity is in the

diastatic power of the pancreas. The practical inference of this is that the food should consist chiefly of carbohydrates, such as starches and sugars; fats should be given in very small amounts and proteids may be predigested. If curds are passed in the stools the milk should be diluted or peptonized.

Indian Medical Gazette, Calcutta

March

18 Cirrhosis of the Liver. J. T. Calvert.
19 Exploratory Laparotomy in Diseases of the Gall-Bladder and Bile-Ducts. F. A. Barker.
20 Ulcerated and Swollen Gums in the Native Army. P. Hehir.
21 An Aid to Diagnosis of Poisonous Snakes. V. B. Green-Armytage.
22 Modern Midwifery Practice in India. G. T. Birdwood.
23 Wounds Inflicted by Tigers, Panthers and Bears. F. H. Gleeson.
24 Native Gunpowder Injuries of the Eye. R. H. Elliot.

Medical Press and Circular, London

March 22

25 Diseases of the Breast. J. R. Morison.
26 Treatment of Lupus Vulgaris with Zinc Ions. S. Taylor and R. W. MacKenna.
27 Colitis. L. A. Bidwell.
28 Bacteriologic Aspects of Colitis. J. C. Matthews.

Archives des Maladies du Cœur, etc., Paris

March, IV, No. 3, pp. 145-208

29 Present Status of Electrocardiography. E. Bordet.
30 Relations Between Pseudoleukemic Anemia and Leukemia. L. Tixier.

Obstétrique, Paris

March, IV N. S., No. 3, pp. 249-344

31 *Uterine Pregnancy After Extra-Uterine Pregnancy. (Des grossesses utérines survenant après une grossesse extra-utérine.) E. Essen-Möller.
32 *Ocular Disturbances in Pregnant Women. (Des troubles oculaires chez la femme enceinte dans leurs rapports avec l'azotémie et la chlorurémie gravidiques.) A. Weil and A. Wilhelm.
33 Structure and Development of Uterine Mucosa. E. Retterer and A. Lelièvre. Commenced in No. 2.

31. **Uterine Pregnancies After Extra-Uterine.**—Essen-Möller remarks that very little attention has been paid to pregnancies occurring in the uterus after an extra-uterine pregnancy, while a number of articles have been published on simultaneous uterine and extra-uterine pregnancies. Nilsson was able to compile sixty-eight cases of this kind in a memoir not long ago, and a number have been reported since. In Essen-Möller's experience with fifty-six patients with extra-uterine pregnancy, 46 per cent. of the thirty-nine women followed to date became pregnant again later; the sound tube performed its functions apparently normally in twenty-eight pregnancies, two of the women passing through three pregnancies afterward. Seventeen of the thirty-nine women thus bore healthy children, and this experience confirms the necessity for leaving the sound tube unmolested in operating for extra-uterine pregnancy. Engström has reported uterine pregnancies in six cases after removal of the pregnant tube and liberation of the other tube from adhesions; Prochownik has reported the same in four cases, and Essen-Möller reports a pregnancy after the release of the sound tube from adhesions, although in his case the succeeding pregnancy was likewise tubal. The main point in respect to pregnancy later seems to be the refraining from drainage. The tabulated details of his fifty-six cases show only two cases in which a pregnancy followed when there had been resort to drainage, and in these two cases the succeeding pregnancy was likewise extra-uterine or there was an interval of four years before the following conception, showing that the tube required a long time to regain its normal functional capacity. In Engström's series likewise drainage had not been attempted in nineteen of the twenty cases in which the extra-uterine pregnancy was followed by normal pregnancy later.

32. **Visual Disturbances in Pregnant Women.**—Weil and Wilhelm compare the visual disturbances liable with retention of chlorids, the dropsical form, and with retention of urea, the dry form. In the first type the visual disturbances are an amaurosis of sudden onset, which promptly subsides when elimination of the chlorids is once more under way; the ophthalmoscope shows nothing or merely a venous congestion around the papilla which disappears without leaving a trace. On the other hand, the distinguishing feature of the eye disturbances with retention of urea is the so-called albuminuric retinitis, the gravity of which is explained by the coincident uremia or azotemia. Even with severe symptoms of this kind, emptying the uterus generally causes their complete retrogression. In a typical case reported the patient was at the seventh month of her first pregnancy. She had had primary chronic nephritis as a child, and during the pregnancy the clinical picture of severe azotemia gradually developed, with apathy, anorexia, pruritus, albuminuric retinitis and convulsions, with almost total amaurosis, while the cerebrospinal fluid contained 2.67 gm. of urea. Delivery was induced and the copious diuresis which followed seemed to wash out the retained nitrogenous bodies and the patient rapidly recovered. Sudden transient amaurosis was observed in two other cases reported, evidently due to chloridemia and subsiding at once after spontaneous delivery. One of these patients had had eighteen, the other three eclamptic convulsions. Venesection was done in both cases. There were no convulsions after delivery.

Presse Médicale, Paris

March 11, XIX, No. 20, pp. 185-200

34 Inaugural Lecture on Internal Pathology. (Les orientations de la médecine.) F. Widal.
35 Albumin Reaction in Sputum. Lecaplain.
36 Support for Visceral Ptosis. (Pneu-sangle anti-ptosique.) Charnaux.

March 15, No. 21, pp. 201-208

37 Vaccine Therapy. A. Mauté.

Revue de Chirurgie, Paris

March, XXXI, No. 3, pp. 281-400

38 *Papilloma of Larynx in Children. A. Broca and E. Roland.
39 Experimental Ligation of Inferior Vena Cava. J. Béjan and M. Cohn.
40 Mixed Tumors of the Thyroid. G. Chavannaz and P. Nadal.
41 *Perforation of Bile Ducts. (Traitement des perforations biliaires en plein péritoine au cours de la lithiase.) G. Cotte and L. Arnaud.

38. **Laryngeal Papillomas in Children.**—Broca and Roland expatiate on the fact that there is no good method of treatment for these laryngeal growths, ensuring against recurrence and leaving the voice normal; the only choice is to determine the least bad technic. If there is dyspnea and much wheezing, tracheotomy may be required; it is well to wait for a time after this as the tracheotomy may eventually lead to the shriveling of the growths. They come and go in the arbitrary and mysterious manner of warts on the skin. Removal of the growths through the mouth, under direct visual inspection, is of course the preferable method and can generally be done after the age of 4 or even a little earlier. But it usually requires more than one operation; the operations must be repeated during months or even years. Tracheotomy may finally become necessary, even then, if the growths sprout again and there is much obstruction of breathing. Exceptionally, thyrotomy or better, perhaps, thyrostomy, may be found preferable. Even after tedious treatment by these various technics, stricture of the larynx may compel laryngostomy. There is always the hope that the papillomas may shrivel spontaneously, however, as the child outgrows the tendency. They sprout as if growing from seed sown by the primary growth, and behave in the larynx much the same as in the bladder. Luys has recently reported a case in which a large papilloma was removed from the bladder, with no sign of recurrence, but a new crop of minute growths of the same kind developed around, requiring multiple cauterization. In addition to the danger of suffocation from the growth of the laryngeal papillomas, there is danger of a suddenly fatal inhibiting reflex. Frenkel has cited such a case in which a child of 6, with no history of dyspnea, suddenly suffocated on rising in the night. The prognosis of papillomas in the larynx is more serious in children than in adults as the lumen is smaller and as children are more liable to warty growths. Spontaneous expulsion and cure was observed by Bruns in three of the forty-eight cases he has compiled; over half the children died before the age of 3 and only five reached the age of 10 without operation. The spontaneous subsidence of the papillomas may explain these cures in some of the cases, and the possibility of this justifies expectant treatment for a reasonable time after tracheotomy. Warts on children's hands sometimes subside after the children have taken a little magnesia, and this treatment has been suggested for children with papillomas in the larynx, hoping thus to favor spon-

taneous retrogression or to aid the retrogression which may follow opening the trachea.

41. **Perforation of Bile Ducts in Lithiasis.**—Cotte and Arnaud give the details of seventy-six cases on record of perforation of the gall-bladder or a biliary passage into the peritoneum. The bile escaping into the peritoneum is almost inevitably septic in case of lithiasis. The main point in treatment, they say, is to drain the gall-bladder outward without delay, not attempting its removal until later if the patient seems unable to bear cholecystectomy at once. This operation is less difficult in these cases than under other conditions as the perforation occurs when the gall-bladder is distended and without adhesions to adjacent organs. If the operation follows soon after the perforation and the peritoneum is not seriously involved, he prefers to wipe it dry and strives to prevent absorption by pouring camphorated oil into the abdominal cavity, and keeping the patients in the Fowler position, that is, raising the head of the bed 18 or 20 inches. There were thirty-four recoveries and forty-two deaths among the seventy-six cases summarized from the literature, including a previously unreported case in a woman of 62. The gall-bladder was merely drained and the liver tamponed off but the temperature did not drop quite to normal, and six weeks later chills, vomiting and fever led to discovery of an abscess near the foramen of Winslow. Prompt and complete recovery followed cholecystectomy.

Semaine Médicale, Paris

March 15, XXXI, No. 11, pp. 121-132

42 *Exercise of the Ear in Treatment of Deafness. (De la gymnastique auriculaire et de son application au traitement de la surdité.) C. Fernet.

March 22, No. 12, pp. 133-144

43 *Diagnosis of Suppurating Echinococcus Disease of the Liver. (Difficultiés et ressources du diagnostic dans certains kystes hydatiques suppurés du foie.) F. Lejars.

42. **Exercise of the Ear in Treatment of Deafness.**—Fernet is not an otologist but he has experimented in his own person and has trained others to exercise the ear as a means of warding off encroaching deafness and utilizing all the auditory capacity left. Instead of using the "best" ear, he turns the defective ear whenever possible and strains to listen with this ear, listening for the ticking of a clock, etc., thus training the ear to listen better. In addition to this exercise in listening he strives to influence the ear muscles so as to favor the hearing by enlarging the meatus and promoting the circulation in the parts. For this he works the scalp around the ear forward and backward, then the outer ear in this way with the regional scalp, and then forward and back and up and down and then in a circle. The sensation of movement is felt down to the depths of the meatus. The exercises should be done gently, with frequent pauses. The best time is in the morning, before arising, for ten or fifteen minutes. Another set of exercises is to listen to a clock's ticking and then gradually draw farther and farther away from the source of the sound until it becomes inaudible, but gradually it is heard again if the ear listens very intensely. The reflex action of the listening act may influence the muscles of the ear to enhance the perception of sounds. By systematic training in this way it is possible to hear the ticking or other sounds at distances previously supposed impossible. The sensibility of the nerves and the better nourishment of the parts all contribute to the benefit derived. The entire organ of hearing functionates better when all its parts are in good vital condition, while any organ doing active work grows stronger and better all the time. In his own person the Eustachian tube leading to the partly deaf ear became permeable after these exercises, thus permitting normal ventilation of the middle ear.

43. **Suppurating Echinococcus Disease of the Liver.**—Lejars comments on the relative frequency of suppurative hydatid cysts in the liver and the available means for diagnosis. The complement-fixation test is extremely valuable in case of positive findings, but it is baffling to obtain a negative response when the operation reveals a large hydatid cyst, as in a recent case in his experience. The cyst was filled with fluid but without daughter cysts. In another case there had been liver colics for three years and a suppurating gall-stone process was surmised, as nothing pathologic could be palpated in the liver. A small subcapsular pus pocket was found and evacuated but the temperature ran up two weeks later and the fixation reaction was distinctly positive. There were chills and jaundice but deep punctures of the liver were negative. Finally he opened the lips of the wound and found in the very center of the liver a large hydatid cyst, distending the liver evenly on all sides, and prompt recovery followed its removal. The suppurating septic angiocholitis first found was evidently secondary to the deep cyst, which was also infective and suppurative. Lejars gives the details of a number of other cases in which the diagnosis was difficult. Fever and local and radiating pains are the most instructive features.

Archiv für Gynaekologie, Berlin

XCIII, No. 2, pp. 189-412. Last indexed April 1, p. 1010

44 Droplets of Fat in the Placenta. J. Bondi.
45 Epinephrin Treatment of Osteomalacia. (Zur Adrenalinbehandlung der Osteomalacie.) J. Novak.
46 Interrelations Between Multiple Sclerosis and Menstruation, Pregnancy and the Puerperium. (Die multiple Sklerose und das Geschlechtsleben der Frau in ihren Wechselbeziehungen.) H. Offergeld.
47 Bacteriology of the Lochia. (Die geeignetsten Methoden zur Untersuchung des Lochialsecretes auf aerobe und anaerobe Streptokokken, ihre Resultate und klinische Bewerthung.) F. Goldschmidt.
48 *Tuberculosis of the Ovaries and Fallopian Tubes. (Beitrag zur Tuberculose der weiblichen Adnexe.) Loiacono.
49 Puerperal Inversion of the Uterus with Chronic Nephritis. Loiacono.
50 The Formation of the Corpus Luteum. (Corpus luteum-Bildung beim Menschen.) R. Meyer.
51 "Pregnancy Liver." (Zur Klärung des Begriffs "Schwangerschaftsleber.") J. Hofbauer.

48. **Tuberculosis of the Ovaries and Tubes.**—Loiacono discusses the findings in twelve cases of tuberculosis of the adnexa in which operative treatment was applied. The first signs of the tuberculous process were noted between the ages of 20 and 37 in all but two cases in which the women were 46 and 47 respectively. There was a primary process in the lungs or bronchial glands in these as in almost all the other cases on record. Eight of the patients were sterile, another had had an abortion, one had borne one and another two children. The symptoms of the tuberculous process in the adnexa were merely disturbances in menstruation, leukorrhea and pains of varying intensity in the region of the adnexa, but there were no sweats, fever or anorexia and tubercle bacilli could not be cultivated from the uterine secretions. The left tube was the seat of the process in all twelve, the right being also affected in nine; the entire adnexa on both sides were involved in only three cases. Three of the patients died soon after the operation; the pulmonary processes were far advanced in these women. The other patients were in comparatively good health at the time of the removal of the diseased tubes, and they regained apparently complete health after the removal of the focus. Histologic study of the adnexa removed and the course of the cases confirm the fact that it is not generally necessary to remove the ovaries in such cases; the tubes are the organs involved, and they display a marked predisposition to tuberculous infection. Their removal is further justified by the necessity for preventing conception later in such women. Even when the ovaries seem slightly involved in the process, it is liable to retrogress to complete restitution after removal of the focus. He adds in conclusion that it may prove an advantage to flush out the abdominal cavity with a weak formalin solution, as is done after an operation for tuberculous peritonitis, in order to rinse out any bacilli that may have been scattered by the operation.

Berliner klinische Wochenschrift, Berlin

March 13, XLVIII, No. 11, pp. 461-508

52 *Affinity of Salvarsan for Nerve Tissue. (Zur Frage der Neurotropie des Salvarsans.) A. Géronne and C. Gutmann.
53 Salvarsan in Leprosy. H. Isaac.
54 *Spontaneous Fractures in Tuberculous Coxitis. O. Ehringhaus.
55 *Modification of Holmgren's Method for Forcing Out Instead of Aspirating Pleural Effusions. E. Aron.

52. **Disturbances in Nervous System After Injection of Salvarsan.**—Géronne and Gutmann give the details of thirteen cases of this kind. The list includes a case with symptoms of irritation of the cerebral and spinal meninges, a month after injection of salvarsan three weeks after infection. Under a second injection of salvarsan all the symptoms subsided. In a

second case there were evidences of basal meningitis and double facial paralysis, coming on eight weeks after injection of salvarsan and disappearing after a second injection. The facial paralysis and psychic disturbances returned four months later but subsided permanently under injection of calomel. In the other cases there were respectively a basal meningitis with double facial paralysis and disturbance in the auditory nerves; double otitis interna with right optic neuritis and hemianopsia; facial paralysis; oculomotor paralysis; optic neuritis with signs of irritation of the meninges and left otitis interna; alternating double otitis interna; double otitis interna; otitis interna with predominant disturbance in the vestibular nerve, and otitis interna with the Menière symptom-complex. These nervous disturbances came on six or eight weeks after injection of salvarsan. The patients were all in the early stage of secondary syphilis except one with a tertiary gumma on the tongue. There were no syphilitic manifestations in any case on the skin or mucosa, but in one case these developed several weeks afterward. Géronne and Gutmann regard these manifestations as an inflammatory infiltration of nerves or meninges resulting from the action of the spirochetes or their toxins and readily influenced by treatment so that complete restitution is the rule. The manifestations have nothing in common, they assert, with symptoms of arsenic intoxication, and nothing of the kind, they say, has ever been observed in patients given salvarsan for diseases other than syphilis, malaria, chlorosis, relapsing fever, etc. They have also encountered in the last six months four syphilitics with disturbances in the auditory nerve who had been treated with mercury alone and had never taken salvarsan; two were in a late stage of syphilis and two had been infected five and six months before. One of the latter patients presented a typical otitis interna exactly as observed in his six patients who had been injected with salvarsan. In this latter group the patients had complained of headache before the drug had been given or their nervous system had been impaired by drink or age and most of them were women. At the same time the frequency of these nervous disturbances and their association with the salvarsan treatment suggest, Géronne and Gutmann remark, that the salvarsan must possess a certain affinity for these nerves. This neurotropic action is not enough to induce a degenerative inflammation in this or that predisposed nerve domain, but yet it is enough to induce some slight change in the nervous system, probably not appreciable even with the microscope, but yet enough to decide the localization of the syphilis. In short, these neuro-recurrences, they say, may be classed as traumatic syphilis. They recommend in conclusion treatment based on this assumption, that is, energetic mercurial treatment, bearing in mind that syphilitic manifestations in the nervous system have a better prognosis the earlier treatment is applied.

54. **Spontaneous Fracture with Tuberculous Hip-Joint Disease.**—Ehringhaus states that in no less than six cases of tuberculous hip-joint disease in his charge the bones in the entire leg became fragile from the trophic disturbance resulting from the tuberculous process. In each case there was spontaneous fracture and it occurred always at the same point where the spongiosa joined the more compact part of the bone, at the lower end of the shaft of the femur, just above the condyle. It is extremely important to keep watch of the bones below with tuberculous coxitis and to examine this special point repeatedly with radioscopy to detect any tendency to fracture and apply appropriate measures to prevent it.

55. **Improved Technic for Forcing Out Pleural Effusion.**—Aron commends Holmgren's technic, described in these columns Jan. 28, 1911, page 312, but he thinks that the same results can be obtained without the necessity for two puncture holes, using merely a two-way trocar. One mouthpiece can be connected with the bulb to pump air into the pleural cavity while the other mouthpiece is connected with the receptacle into which the effusion is blown out by the air forced into the pleural cavity.

Deutsche medizinische Wochenschrift, Berlin

March 16, XXXVII, No. 11, pp. 481-528

56 *Anaphylaxis. (Die Anaphylaxie mit bes. Berücksichtigung ihrer Bedeutung für Infektion und Immunität." E. Friedberger

57 Auto-Infection of Parturients. (Zur Frage der Selbstinfektion.) L. Aschoff.

58 Biologic Action of Radium Emanations. J. Plesch.

59 Technic for Intravenous Injection of Salvarsan. W. Wechselmann.

60 *Cause for Toxic Action of Acid Solutions of Salvarsan. (Ursache für die giftige Wirkung säurer Salvarsanlösungen.) Meissner.

61 *Vaccination Against Small-Pox. (Zur Frage des Impfschutzes.) E. Levy.

62 Quartan Malaria in Germany. A. Hatzfeld.

63 Broad Button Probe for Diagnosing Strictures in Esophagus and Rectum. (Neue Methode der diagnostischen Sondierung der Mastdarm- und Speiseröhrenverengerungen.) R. Callmann.

64 Congenital Angioma of Parotid Gland. P. Harrass and W. Suchier.

65 Ephemeral Traumatic Glycosuria in New-Born Infants. E. Hoeniger.

56. **Anaphylaxis.**—Friedberger recapitulates the arguments which have convinced him that immunity and anaphylaxis are merely quantitative variations of a single phenomenon. Both result from the presence of alien albumin in the organism, which has obtained access outside of the alimentary canal. With natural infection the albumin is produced by the bacteria only gradually; it is not incorporated all at once, like the amount causing anaphylaxis. He has been able to produce anaphylaxis or the symptoms of acute infection at will by administering large or small amounts of the foreign proteid. The temperature curve is particularly interesting under these various conditions, as he shows by detailed reports of his experiments.

60. **Precipitation in Acid Solutions of Salvarsan.**—Miessner is in charge of the veterinary institute at Bromberg and he applied arsenic treatment to ten cattle with foot-and-mouth disease; arsenophenylglycin was given to six and salvarsan to four, in an acid solution. The dose of the latter was only 3 gm., that is, 0.007 gm. per kilogram of weight, but all the animals showed severe symptoms at once—difficulty in breathing, foaming at the mouth—and they all died in from ten hours to two days. Ehrlich suggested that these fatalities might have been the result of a special susceptibility in foot-and-mouth disease, and another group of animals was treated with a smaller dose, 0.005 gm. per kilogram. Similar symptoms developed in these while cattle injected with an alkaline solution bore much larger doses, 0.4 gm. per kilogram, without any signs of disturbance. Microscopic examination confirmed the assumption that the intravenous injection of the acid solution had caused accumulation of the blood in the pulmonary artery into which the drug made its way after being injected into the jugular vein, the vessel becoming obstructed and arresting the arsenic which accumulated at this point. This assumption was confirmed *in vitro*, the acid solution entailing precipitation in defibrinated blood. The injurious action of the acid solution in man is due to the same cause, that is, thrombosis of the pulmonary artery and its sequels, as shown, he says, by the necropsy findings in a recent case in Hamburg in which death followed an injection of an acid solution of salvarsan. These data confirm the necessity for neutralizing the salvarsan. One gm. of salvarsan requires 4.4 c.c. of normal solution of soda to neutralize it; a heavy precipitate is thrown down which requires 6 c.c. more of the soda to dissolve it.

61. **Vaccination Against Small-Pox.**—Levy remarks that small-pox is now so rare in Germany that the present generation of physicians know scarcely anything about it and some may fail to realize the absolute importance of vaccination. He reports a case which is as convincing as a laboratory experiment in respect to the protective power of vaccination and the danger of transmission of the disease from the mildest forms. A German returning from a trip to Siberia had a slight eruption in the face but did not feel ill and paid no attention to it, but it was evidently variola. He had been vaccinated twice, the last time forty years before. His mother had never been vaccinated, and she came down with small-pox and died. Her daughter's family with three children came from a distance to the funeral; all had been vaccinated except the youngest, a boy of 2, and this child developed severe small-pox. The other members of the family contracted the small-pox from the child but in such a mild form that it was scarcely recognizable. The disease had not been recognized at

the time in any of the cases and no measures for disinfection had been applied.

Medizinische Klinik, Berlin

March 12, VII, No. 11, pp. 402-440

66 Office Tuberculin Treatment. (Notwendigkeit und Möglichkeit ambulanter Tuberkulinbehandlung durch den praktischen Arzt.) K. Blümel.
67 *Treatment of Thoracic Empyema. (Behandlung der Thoraxempyeme nach Bülau.) R. Frank.
68 First Aid to the Injured by the Laity. (Erste Wundbehandlung durch Samariterhände.) H. Hans.
69 *Salvarsan in Syphilis. O. Rissom.
70 Bronchial Stenosis. (Chronische Bronchialerkrankungen mit Ausschluss der Tuberkulose. VIII.) A. Posselt.
71 Gastro-Intestinal Hemorrhage with Purulent Cholecystitis. Feldhahn.
72 Tests and Limits of Visual Acuity. (Ueber Sephrüfungen und die Grenze der Sehschärfe.) W. Thorner.

March 19, No. 12, pp. 441-478

73 Importance of Phosphorus in Courses of Forced Feeding, Rest and Passive Exercise. (Ueber Mastkuren.) A. Bickel.
74 *Intestinal Stenosis. J. Schnitzler. Commenced in No. 11.
75 The Sinus Node. (Welche Bedeutung kommt dem Sinusknoten zu.) W. Koch.
76 *Salvarsan in Syphilis. F. Port.
77 Malt Extract. E. Seel.
78 Action of Thyroid Extract on Gastro-Intestinal Cancer. (Wirkung von Schilddrüsenextrakt auf Magendarmkrebse.) E. Diesing.
79 Bronchial Concrements. (Chronische Bronchialerkrankungen mit Auschluss der Tuberkulose. IX.) A. Posselt.
80 Intoxication from Inhaling Volatile Substances in Tubercle Bacilli Cultures. (Vergiftung mit den Riechstoffen der Tuberkelbazillen.) E. Leschke.

67. **Continuous Drainage of Empyema of the Chest.**—Frank reports his experiences with forty-three patients with empyema in the thorax in the last ten years. About 55 per cent. of the patients were cured; in none of these cases had the empyema been installed for more than six weeks. Three boys and two girls were under 10; four boys and one girl were under 20. In only two cases was tuberculosis certain; it was suspected in two others among the twenty-four cases of recovery. His experience confirms the advantages of permanent drainage according to Bülau's technic; with this a flat flask is suspended by a strap from the opposite shoulder. The empyema drains into the flask through a rubber tube and drain inserted at the lowest point of the empyema, held in place with straps of adhesive plaster. A clamp on the tube is opened every two or three hours to allow not more than 200 c.c. of pus to escape; it is important not to drain too much at one time. He commends this technic as excellent for acute and not too old empyema; it is the simplest and the least annoying of all, he states, and the final outcome is good. Thoracocentesis should be reserved for small encapsulated empyema while the thoracoplastic operations should be reserved for the cases in which the Bülau technic is impracticable or in which there are chronic pathologic changes in the pleura.

69. **Salvarsan in Syphilis.**—Rissom concludes from his experience in the army that salvarsan should not be recommended for the sole treatment of syphilis among soldiers, although in the malignant form and with recent primary lesions it is certainly efficient. If it is used in military hospitals he advises intravenous injection of from 0.4 to 0.5 gm. followed at once by a course of mercurial treatment. The local infiltration with subcutaneous injection interferes with the military service, so that this technic is not advisable.

74. **Acute Intestinal Stenosis.**—Schnitzler advocates prompt relief of peritonitic stenosis of the intestine by opening into the bowel. He has made a fistula of this kind in peritonitic ileus in almost one hundred cases and he has never had occasion to regret it. More than once he has regretted that he had not done it twenty-four hours sooner. Feculent vomiting should not be waited for; colic pains, lack of stool and flatus and the metallic tinkling sounds in the intestine to which Wilms recently called attention—these are signs enough of stenosis and there should be no further delay. He treats the patients in this category the same as for incarcerated hernia, except that he does not try to remove the obstruction but merely makes one or more openings into the distended loops. It is foolish, he declares, to waste time and to annoy the patients with medical measures in these cases; in fact, high enemas are rarely indicated and the most misused measure in modern medicine. Only with volvulus of the sigmoid flexure is the high irrigation superior to an ordinary enema. If a small enema does not bring stool within twenty-four or forty-eight hours he advocates enterostomy without delay. When it is done early, the fistula can be made by the Witzel technic. When the ileus was not due to a neoplasm or other permanent obstruction, stool was voided by the natural route within a few days in every case. He adds that appendicitis may from the start present merely the picture of purely mechanical ileus. In conclusion, he refers to the mesenteric occlusion from compression of the duodenum by the root of the mesentery—the postoperative ileus to which he called attention in 1895. He still maintains that the dilatation of the stomach in these cases is secondary to this compression, this assumption being sustained by the benefit from turning the patient on the abdomen. In all cases of postoperative ileus he urges the physician to refrain from exploring the abdomen, mere enterostomy generally proving sufficient for the time being.

76. **Salvarsan in Syphilis.**—Port insists on having his patients sign a paper which states that the new drug has not crowded out the tried and tested mercury, but is administered at the special desire of the patient and with the understanding that a course of mercurial treatment must follow and that the hospital is not to be held responsible for any injurious consequence of the salvarsan injection. He states that he was delighted to have the certificate in his hands in the numerous cases in which a deep necrotic process developed at the point of the subcutaneous injection. This occurred, he says, in a shockingly large proportion of his sixty cases until he changed to the intravenous technic. In one case there was evidently a small infarct in the lung responsible for pain in the left chest, area of dulness and bloody sputum the day after the injection. The danger of thrombosis and embolism is shown by this case not to be so negligible as many maintain. In any event, the patient should stay in bed for two or three days after the injection. One of his patients insisted on leaving the clinic twenty-four hours after the intravenous injection, but returned two days later with local thrombosis, the arm being swollen; the symptoms subsided under appropriate measures in a few days. On account of the danger of such disturbances the injection is made in the left arm. It is his impression that patients with recent infection react with higher temperature than others. Vomiting and diarrhea were common after intravenous injections, and one patient became very deaf but hearing gradually returned in the course of two weeks. One patient had total right deafness coming on five months after subcutaneous injection of the neutral emulsion, although there were no signs of recurrence of the syphilis. He thinks that these cases of neuro-recurrence are due to toxic injury of the nerves, not only by the endotoxin of the germs killed by the salvarsan but by the drug itself, and he thinks that patients should be warned against such eventualities. He declares, further, that the intravenous technic is not suited for general practice, and that it is not free from danger of thrombosis and embolism even in the hands of specialists.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XXII, No. 5, pp. 675-794. Last indexed April 1, p. 1011

81 *Tumors in Cerebellopontine Angle. (Die Kleinhirnbrückenwinkeltumoren.) H. Leischner.
82 *Gastric Functioning After Gastro-Enterostomy and Resection of the Pylorus. L. Schüller.
83 Reciprocal Relations Between Typhoid and Appendicitis. (Wechselbeziehungen des Abdominaltyphus und der akuten Appendicitis.) E. Hesse.
84 *Conservative Treatment of Spasm with Hour-Glass Stomach. (Ueber Erfolge und Aussichten einer konservativen Therapie des Sanduhrmagens, nebst Beiträgen zur röntgenologischen Diagnostik desselben.) E. Schlesinger and J. Nathanblut.

81. **Tumors in Cerebellopontine Angle.**—Leischner analyzes ten cases of this kind in which operative treatment was applied in the surgical clinic at Vienna in charge of von Eiselsberg. The patients were between the ages of 30 and 50, and the symptoms pointed unerringly to a process obstructing the cerebellopontine angle. In one case, the history of syphilis, the positive Wassermann reaction and the transient benefit under antisyphilitic medication suggested the possibility of a gumma, but the rapid disturbance in vision compelled immediate operation, which proved to have been fully justified as the growth was a true fibroma. Headache, dizziness and deafness in one ear or subjective sounds in the ear first brought the patients

to the clinic; then came vomiting and choked disc. The operation was done in two sittings with an interval of from six to nine days. The intervention has been borne much better since it has been the practice to maintain permanent subcutaneous saline infusion during the first sitting. No attempt is made to drain the site of the tumor since one patient succumbed to secondary infection from this cause. Six of the patients died; four were discharged much improved. This brings to fifty-one the number on record of tumors of this kind given operative treatment. Excluding the incomplete operations, twenty-nine of the remaining forty-four patients died during or soon after the operation, including six who did not survive the first sitting. Shock or paralysis of the respiration or heart centers was the fatal factor in most of the cases; fulminating hemorrhage as the tumor was being shelled out was the cause in three cases. Fifteen patients bore the operation well and eleven are still in comparative health from one to eighteen months since the operation. The end-result depends, naturally, on the degree to which the nerves in the region have been injured by the tumor before its removal, especially the optic nerve. The younger the patient and the smaller the tumor, the better the outcome. An operation should be advocated in every case, he affirms, in which the general condition is still good and the medulla oblongata does not show signs of injury. The tumors are generally readily shelled out, even when they have attained quite a large size.

82. **Functioning of the Stomach After Gastro-Enterostomy.**—Schüller has examined forty patients to determine present conditions after a gastro-enterostomy, and here analyzes the findings in twenty-five, including thirteen cases in which the pylorus was resected. The findings teach the necessity for making the opening at the lowest point of the stomach after resection, and further that the gastric digestion nearly always suffers after a gastro-enterostomy. The conditions in regard to the passage of fluids along into the intestine differ in the human and the dog stomach after this operation.

84. **Treatment of Hour-Glass Stomach.**—Schlesinger and Nathanblut conclude from their analysis of two cases of hour-glass stomach that Roentgen-ray examination is indispensable for estimation of the conditions, and that a superposed spasmodic contraction may be relieved by medical measures and thus the whole clinical picture be so improved that operative treatment may be avoided.

Münchener medizinische Wochenschrift

March 14, LVIII, No. 11, pp. 553-608

85 *Temporary Eventration of Intra-Abdominal Organs for Roentgen-Ray Examination and Treatment. R. Werner and A. Caan.
86 Etiology of Puerperal Fever. H. Schottmüller.
87 Ubiquity of Paratyphus B. Bacilli. P. Schmidt.
88 Pharmacologic Study of Uterine Tonics. (Zur Pharmakologie und klinischen Dignität der Uterustonika.) M. Neu.
89 *Roentgen Rays in Diagnosis of Pregnancy. (Anwendung des Röntgenverfahrens bei der Diagnose der Schwangerschaft.) L. Edling.
90 Behavior of Blood-Pressure with Intravenous Injection of Salvarsan. (Verhalten des Blutdrucks bei intravenösen Salvarsaninjektionen.) R. Sieskind.
91 Jaundice After Injection of Salvarsan. (Ikterus nach Salvarsan.) E. Klausner.
92 Transverse Osteotomy to Correct Torsion of Leg with Club-Foot. (Torsion der Unterschenkelknochen bei angeborenen Klumpfüssen und ihre Heilung.) R. Purckhauer.
93 Preservation of Digitalis Leaves. (Wert der frischen Fol. Digitalis und ihre Konservierung.) M. Winckel.
94 Bolus Alba for Dressings. (Der Bolusverband, ein neuer steriler Wundverband.) J. Stumpf.
95 Finger and Toe Bones as Substitutes for Each Other. (Auswechselung von Finger- und Zehenknochen.) H. Wolff.
96 Eclampsia. W. Hannes.
97 Thucydides' Plague. (Das klinische Bild der Pest bei Thucydides.) Schröder.
98 Memorial Tribute to E. G. Janeway. H. Oertel.

85. **Eventration for Roentgen-Ray Treatment of Internal Organs.**—Werner and Caan have been applying the method suggested by Carl Beck for temporary eventration of inoperable cancers to submit them to the action of the Roentgen rays. They report their experiences with fourteen cases including nine with inoperable gastric cancer, two with advanced rectal carcinoma, and one each of a gall-bladder, ovarian or colon tumor. Besides the beneficial action of the radiotherapy, it is possible, by this means, to apply more radical local measures to the growth. They describe the technic with which they eventrated gastric and rectal cancers, keeping them exposed in this way for some time while the region around is fully protected. They think this method of temporary eventration should take the place of simple exploratory laparotomies and of gastro-enterostomies in most cases, and of other palliative measures. Five illustrations show the technic advocated for this "radiosurgery," as they call it.

89. **Roentgen Rays in Diagnosis of Pregnancy.**—Edling has found it possible to obtain instructive radiographs of the fetus as early as the beginning of the third month of pregnancy. Multiple gestation and abnormal positions and malformations can also be readily recognized by this means. He has been applying the Roentgen rays systematically to a number of pregnant women in the Malmö and Lund Hospitals, and has found the radiographs equally reliable for diagnosis of extra-uterine pregnancies. No harm from the procedure was ever detected.

Wiener klinische Wochenschrift, Vienna

March 16, XXIV, No. 11, pp. 371-410

99 Bacteriologic Revision of Aseptic Operations. (Untersuchungen über Asepsis.) V. Hecht and R. Köhler.
100 Action of Ferments on Tuberculin. T. Pfeiffer and H. Trunk.
101 *Syphilitic Disease of Auditory Nerve. (Erkrankungen des Akustikus bei erworbener Lues.) O. Mayer.
102 *Occurrence of Syphilitic Disease of Internal Ear in Early Stages of Syphilis. H. Frey.
103 Echinococcus Disease of Muscles and Skin. (Muskel- und Hautfinnen. Röntgennachweis verkalter Zystizerken.) K. Pichler.

101. **Disturbances in the Auditory Nerve with Acquired Syphilis.**—Mayer has been analyzing the histories of sixty-five cases of syphilitic affections of the auditory nerve observed at Graz since 1896, continuing the series of sixty-six previous cases reported at that date by Habermann. These series show that the auditory nerve is liable to become affected early after syphilitic infection, even as early as three weeks after the primary sore, and thus by the sixth week after infection. The auditory affection is most frequent during the first six months but it may not develop until after twenty-five or thirty years. Syphilitic affections of the auditory nerve generally commenced with subjective sounds in the ears and, in about half the cases, with dizziness. These symptoms were noted sometimes as part of the prodromal picture. In the later stages of secondary syphilis the ear affection usually develops accompanying recurring manifestations, in which case it may be regarded as part of the latter. The syphilitic affection of the auditory nerve almost always came on gradually and was more or less severe. It was generally bilateral or the deafness was more pronounced on one side than the other. In about half the cases vestibular symptoms were also observed, sometimes merely slight dizziness, in others severe vertigo accompanied by vomiting and serious disturbance in balance. An isolated affection of the vestibular nerve was never encountered in any of the 131 cases in the series, while this was the trouble in Urbantschitsch's five cases of disturbances in the auditory nerve after injection of salvarsan. Isolated disturbance in the vestibular nerve is extremely rare; Mayer knows of only two cases of the kind on record: Ruttin's case, in which no explanation for the disturbance was found, and Leidler's case in which the isolated affection of the vestibular nerve was traced to sausage poisoning. Ehrlich has reported vestibular symptoms in mice treated with arsacetin. These experiences show that the vestibular nerve may be injured by poisons which do not affect the cochlear nerve, and they sustain the assumption that the isolated vestibular disturbance observed after salvarsan may be the result of toxic action from this drug. The fact that not a single instance of an isolated vestibular affection was observed in the sixty-five cases of Mayer's series of syphilitic disturbances of the auditory nerve certainly sustains this assumption. Another argument in favor of it is the fact that the vestibular disturbances developed so soon, within a few hours of the injection of salvarsan, and, further, that such a comparatively large number of cases have been observed within such a short period. In conclusion Mayer reiterates that true syphilitic disturbances in the auditory nerve are not so infrequent as some have asserted recently, while, on the other hand, they differ in many respects from those which have been observed after injection of salvarsan.

102. **Disturbances in the Auditory Nerve with Acquired Syphilis.**—Frey reviews the literature on this subject citing thirty-five authors and adding that auditory affections for which syphilis is responsible are probably more common than is generally recognized as attention has not been attracted particularly to them until recently and only the more striking cases have been reported.

Zentralblatt für Chirurgie, Leipsic

March 11, XXXVIII, No. 10, pp. 345-384

104 Mixed General Anesthesia. (Ueber Injektionsnarkose mit Pantopon-Skopolamin.) G. Brüstlein.
105 Drainage of the Thorax. M. Tiegel.

March 18, No. 11, pp. 385-416

106 Etiology of Cleft Palate. (Zur Entstehung der angeborenen Gaumenspalte.) W. Kramer.
107 Operation for Umbilical Hernia with Extensive Excision of Fat. (Die Nabelbruchoperation mit ausgedehnter Fettexzision.) F. Oehlecker.

Zentralblatt für Gynäkologie, Leipsic

March 18, XXXV, No. 11, pp. 433-472

108 *Progress Forward or Backward. (Vermeintlicher Fortschritt und Rückzug.) B. Krönig.
109 *Etiology of Eclampsia. A. Dienst.
110 The Suprasymphyseal Transverse Incision. (Zur Diskussion über den suprasymphysären Fascienquerschnitt.) R. Klotz.
111 Hypnosis. (Täuschung oder Wirklichkeit?) H. Fulda.
112 Shortening the Ligaments for Uterine Prolapse and Retroversion. (Die Verkürzung der Ligamenta cardinalia bei Prolaps und Retroversionen durch W. M. Polk in Neuyork.) J. Kocks.

108. This is a denunciatory reply to Roth's article summarized in these columns, March 25, page 935.

109. **Etiology of Eclampsia.**—Dienst ascribes eclampsia to the injury resulting from accumulation of fibrin ferment from destruction of polynuclear leukocytes used up in the pregnancy. The fibrin ferment or thrombin accumulates in the liver, and in consequence of the congestion in this organ and the mechanical hindrance to the circulation in the vena cava from the pressure of the large uterus at term, the fibrin ferment does not get into the blood as under other conditions and thus does not come in contact with the antithrombin. The liver suffers from this accumulation and is no longer able to produce the necessary antithrombin in sufficient amounts. Then the fibrin ferment accumulated in the lower part of the body in such large amounts is suddenly mobilized when labor commences, and the blood is thus suddenly overwhelmed with a flood of it. This explanation of the origin of eclampsia has been sustained, he asserts, by his experimental research.

Gazzetta degli Ospedali e delle Cliniche, Milan

March 9, XXXII, No. 30, pp. 345-322

113 *Experiences with Contracted Pelvis. (Casistica dei bacini ristretti) O. Rigamonti.

March 12, No. 31, pp. 323-338

114 Fracture of the Pubis. (Frattura del pube con rottura dell'uretra e della vescica.) M. Fasano.

March 14, No. 32, pp. 339-346

115 Pathogenesis of Rigidity of Abdominal Walls. (Sulla patogenesi della tensione addominale.) U. Fabris.

113. **Contracted Pelvis in Italy.**—Rigamonti states that the custom of carrying a basket on the back, the *gerla*, in common use in the Italian mountains, has a tendency to deform the pelvis, reducing particularly the anteroposterior diameter. He found contracted pelvis in 52 of the 399 women he has delivered in the last three years in his practice in an Italian mountain district with a population of 3,500. Every one of the women with contracted pelvis had been accustomed to carry heavy burdens on her shoulders in this way from the age of about 11.

Policlinico, Rome

March 12, XVIII, No. 11, pp. 326-356

116 *Electricity in Treatment of Post-Diphtheritic Paralysis of the Velum. G. Fumarola.

Riforma Medica, Naples

March 13, XXVII, No. 11, pp. 281-308

117 Spasm of the Larynx. (Laringismo.) F. Massei.
118 Tint and Spectrum of Normal Blood Serum (Colore e spettro del siero sanguigno normale.) D. De Sandro.
119 Causes of Errors in Localization of Lesions in the Brain. (Diagnosi di sede delle alterazioni e dei tumori encefalici.) G. Finzi.
120 Major Operations Under Primary Ether Anesthesia. (L'ebbrezza eterea alla Sudeck specie in operazioni di lunga durata.) G. Gheza.

116. **Postdiphtheritic Paralysis of the Velum.**—Fumarola reports five cases of paralysis of the velum following diphtheria in which he applied Larat's technic for electric treatment. In the first three cases the paralysis dated from twenty and forty days and rapid relief followed three or four sittings, with a complete cure after eight and eleven. No benefit was anticipated in the fourth case as the paralysis was of seventeen years' standing, and none was realized. In the fifth case, the electric treatment was commenced too soon, while the diphtheritic neuritis was still in progress, the sixth day after the first signs of trouble. The consequence was an aggravation of both subjective and objective symptoms; this case teaches the importance of waiting for the subsidence of the neuritis before commencing treatment. The current may be a rapid intermittent faradic or the alternating sinusoidal. It should be turned on for about fifteen minutes. The patient should feel it but not enough to cause pain. One of the large electrodes is placed at the back of the neck and the current is closed by placing the hands or feet in a basin of water.

Hospitalstidende, Copenhagen

February 8, LIV, No. 6, pp. 137-168

121 *Rapid Eating in Origin of Gastric Disease. (Om Madslugningens ætiologiske Betydning for Ventrikellidelser.) E. A. Hallas.

February 15, No. 7, pp. 169-192

122 The Wassermann Reaction in Danish Imbeciles. (En Undersøgelse af de aandssvage i Danmark ved Hjælp af Wassermann's Reaktion.) O. Thomsen, H. Boas, B. Hjorth and W. Leschly.

February 22, No. 8, pp. 193-224

123 *Non-Operative Treatment of Cancer. (Den ikke-kirurgiske Behandling af Kræft.) T. Rovsing.

March 1, No. 9, pp. 225-248

124 Syphilis Transmitted to Infant at Birth. (Et Tilfælde af Syfilis erhvervet ved Fødslen: Smitte fra Moder til Barn.) P. Haslund.
125 Croupous Pneumonia in Greenland. A. Bertelsen.

March 8, No. 10, pp. 249-272

126 Case of Polypous Sigmoiditis. H. A. Sølling.

March 15, No. 11, pp. 273-304

127 Case of Lympho-Endothelioma. K. Secher.
128 Two Cases of Obstruction from Meckel's Diverticulum. T. L. Smith.
129 Fatal Ether Accident. (Et Dødsfald ved Aeternarkose.) J. Sturup.

121. **Hasty Eating in Origin of Stomach Disease.**—Hallas found in examination of thirty-two idiots signs of abnormal stomach functioning in no less than twenty-two. All the patients were inmates of the asylum and none chewed food properly. Akesson has also reported six patients with achylia in thirteen imbeciles examined who swallowed their food hastily, while there were signs of abnormal gastric functioning only in five of nineteen who ate more hygienically. Hallas thinks that the insane asylums offer facilities for study of gastric affections better than can be obtained elsewhere, as the patients are under observation for long periods.

123. **Non-Surgical Treatment of Cancer.**—Rovsing's article was read to open the discussion on this subject at the recent international cancer conference at Paris. He has had wide experience with various non-operative means of treating cancer, the results being negative with trypsin in his fifteen cases; fulgurization he has never tried as it cannot be thoroughly curative, while it is too painful for a palliative measure. His experience has been more favorable with Roentgen-ray treatment, especially in a number of cases of small rodent ulcers of the face. He has become convinced that the Roentgen rays actually promote the growth of carcinomas. On the other hand, they have a curative influence on some sarcomas. It is impossible to say, however, which sarcomas are going to yield to this influence; the action is local, having no effect on metastases elsewhere. At the same time he reports the complete subsidence of a sarcoma in the neck in two cases and of an osteosarcoma in three under Roentgen-ray treatment, but only one patient is still in good health to date. The details of this cured case are given with illustrations. This case seems to show that the sarcoma first must be opened up so that it can be directly exposed to the action of the rays. The sarcoma in this case was on the top of the head and after twenty-one exposures in seven weeks not a trace of it was left. The scalp flap was then replaced and five series of exposures were made later. There has been

no sign of recurrence during the four and a half years since. Rovsing thinks that radium may be counted on for a similar curative local action for cancer but, like the Roentgen rays, there is no general action. He also reports retrogression of a cancer after inoculation of erysipelas streptococci. The resulting erysipelas had an unmistakable curative action on the sarcoma on the forearm but the patient succumbed to unsuspected metastasis in the lungs. He adds that the success of salvarsan in syphilis suggests the possibility of an effectual arsenic treatment of cancer. His experiences were still more promising, he states, with vaccination according to Wright's technic. He has applied this since May, 1909, in seven cases of sarcoma, seven of carcinoma of the breast, one of cancer of the bladder, one of the vulva and one of epithelioma of the cheek. No permanent benefit was apparent in the carcinoma cases, but with sarcoma the outlook is more promising; he has two patients who seem to have been permanently cured by this means, one of a recurring sarcoma in the liver and the other in the thigh. There has been no sign of further trouble during the five and nine months since. He is inclined to accept the possibility of direct contagion of cancer. In his own family an uncle, 70 years old, had an ulcerating osteosarcoma. His young daughter tended him and soon developed universal sarcomatosis, fatal in two months. He knows of other cases in which daughters who tended a mother with cancer of the breast also developed cancer. He cites further statistics showing that in the Sorø district cancer is extremely prevalent, while scarcely any cases are known in the Aalborg district. He knows of houses where the people moving in get cancer; in one house at Faxe occupied by several physicians in turn they developed sarcoma and died in the course of a year or two—these experiences speak against the assumption of embryonal factors and point to infection. They are only clinical observations, he adds, but he is convinced that the microbe will some day be found which will explain them. In the discussion of Rovsing's article, Poulsen stated that he has kept records of 400 cancer patients after radical treatment, and nearly all have succumbed since to cancer, if not to metastasis, to a primary cancer at some other point. He even ventures to say that when a human being is once operated on for cancer, he will, if he lives long enough, certainly die of cancer.

Hygiea, Stockholm

February, LXXIII, No. 2, pp. 130-252

130 *Roentgen-Ray Examination of Kidney Pelvis. (Pyelografi.) E. Key.
131 Sigmoiditis, Diverticulitis and Perisigmoiditis. A. Hedlund.
132 Improved Technic for Artificial Anus After Resection of Intestines. (Metod att anlägga anus præternaturalis i vissa fall af tarmresektion.) K. Dahlgren.
133 Progressive Deafness. (Om otoskleros och andra former af kronisk progressiv döfhet.) J. Möller.

130. **Roentgen Findings of the Kidney Pelvis.**—Key discusses the technic for pyelography and the extremely instructive and reliable findings thus to be obtained. He gives them as found in twenty-one cases with the detailed clinical histories and commends it as a harmless method for examination. The method could not be applied in three of the cases described on account of tuberculous ureteritis or other cause.

Ugeskrift for Læger, Copenhagen

March 16, LXXIII, No. 11, pp. 357-404

134 *Chondrotomy for Apical Disease. (Om den operative Behandling af Spidsefitse og Emfysem—Freund's Operation.) E. Brandorff.

134. **Chondrotomy for Apical Disease.**—Brandorff reviews the articles that have been published on Freund's operation to restore elasticity to the upper part of the chest wall. He has found forty-five cases on record, to which he adds four done in Denmark. The results have been very encouraging. When the operation is done on one side at a time, it seems comparatively free from danger.

Correction: Louse, Not Flea, Transmitter of Typhus.—Prof. Russell M. Wilder, Chicago, calls attention to the fact that in THE JOURNAL, April 8, p. 1073, in the abstract of an article by Nicolle in the *Annales de l'Institut Pasteur*, the word flea is used in place of louse. Mr. Wilder says that Nicolle's work has all been with the body louse, *Pediculus vestimenti*, and it is with this insect that he obtains transmission of typhus to monkeys, not with the flea. Mr. Wilder is correct. Nicolle states expressly that his experiments with fleas and bedbugs were constantly negative. The prophylaxis of typhus is much easier with the body louse than with the flea, as soap and water and clean linen, Nicolle says, will usually banish lice, whereas fleas are harder to get rid of.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

TEXT-BOOK OF OPERATIVE SURGERY. By Dr. Theodor Kocher, Professor of Surgery and Director of Surgical Clinic in the University of Bern. Third English Edition. Authorized Translation from the Fifth German Edition by Harold J. Stiles, M.B., F.R.C.S., Edin., Surgeon to the Chalmers Hospital, Edinburgh, and C. Balfour Paul, M.B., F.R.C.S., Edin., Assistant Surgeon, Royal Edinburgh Hospital for Sick Children. In Two Volumes. Cloth. Price, $12 net. Pp. 723, with 415 illustrations. New York: The Macmillan Co., 1911.

THE APPLICABILITY TO MEDICOLEGAL PRACTICE IN INDIA OF THE BIOCHEMICAL TESTS FOR THE ORIGIN OF BLOOD-STAINS. By Lieut.-Colonel W. D. Sutherland, M.B., I.M.S. (Edited by the Director-General, Indian Medical Service). Scientific Memoirs. By Officers of the Medical and Sanitary Departments of the Government of India. New Series. No. 39. Issued Under the Authority of the Government of India by the Sanitary Commissioner with the Government of India. Paper. Pp. 35. Calcutta: Supt. Government Printing, 1910.

THE WASSERMANN SERO-DIAGNOSIS OF SYPHILIS IN ITS APPLICATION TO PSYCHIATRY. By Dr. Felix Plaut, Scientific Assistant in the Psychiatric Clinic of the University of Munich. Authorized Translation by Smith Ely Jelliffe, M.D., Ph.D., Professor of Psychiatry, Fordham University, New York, and Louis Casamajor, A.M., M.D., Assistant New York Neurological Institute. Nervous and Mental Disease Monograph Series No. 5. Paper. Pp. 188. New York: The Journal of Nervous and Mental Disease Publishing Co., 1911.

WHAT SHALL I EAT? A Manual of Rational Feeding. By F. X. Gouraud, Formerly Chief of the Laboratory of the Medical Faculty of Paris. With a Preface by Prof. Armand Gautier, of Paris. Only Authorized Translation into the English Language by Francis J. Rebman. With a Glossary Containing Definitions of the Principal Technical Terms, and an Index of Diseases Referred to in the Text. Cloth. Price, $1.50. Pp. 379. New York: Rebman Co., (1911).

CLEVER HANS (THE HORSE OF MR. VON OSTEN). A Contribution to Experimental Animal and Human Psychology. By Oscar Pfungst. With an Introduction by Prof. C. Stumpf. Translated from the German by Carl L. Rahn, Fellow in Psychology in the University of Chicago. With a Prefatory Note by James R. Angell, Professor of Psychology in the University of Chicago. Cloth. Price, $1.50 net. Pp. 274. New York: Henry Holt & Co., 1911.

THE SOCIAL EVIL IN CHICAGO. A Study of Existing Conditions with Recommendations by the Vice Commission of Chicago (a Municipal Body Appointed by the Mayor and the City Council of the City of Chicago) and Submitted as Its Report. Chairman, Dean Walter T. Sumner, 117 North Peoria Street, Chicago. Paper. Pp. 368.

VERHANDLUNGEN DER BERLINER MEDIZINISCHEN GESELLSCHAFT AUS DEM GESELLSCHAFTSJAHRE 1910. (Separat-Abdruck aus der Berliner klinischen Wochenschrift.) Herausgegeben von dem Vorstande der Gesellschaft. Band XLI. Paper. Pp. 380, with illustrations. Berlin: L. Schumacher, 1911.

THIRTY-FIFTH ANNUAL REPORT OF THE LADIES' UNION CHARITABLE SOCIETY (INCORPORATED), CONDUCTING THE LAWRENCE GENERAL HOSPITAL AND CHILDREN'S HOME. For the Year Ending Sept. 30, 1910. Organized Oct. 5, 1875. Paper. Pp. 69, with illustrations. Lawrence, Mass., 1910.

DIE BEHANDLUNG DER FRAUENKRANKHEITEN. Für die Praxis Dargestellt. Von Dr. J. Veit, Professor und Direktor der Universitäts-Frauenklinik in Halle a.S.Geh.Med.-Rat. Paper. Price, 8.20 marks. Pp. 242, with 34 illustrations. Berlin: S. Karger, 1911.

THIRTEENTH ANNUAL REPORT OF THE MANAGERS OF THE NEW JERSEY STATE VILLAGE FOR EPILEPTICS, SKILLMAN, SOMERSET COUNTY, N. J. For the Year Ending Oct. 31, 1910. Opened Nov. 1, 1898. Paper. Pp. 22, with illustrations.

FORTY-FIFTH ANNUAL REPORT OF ST. FRANCIS' HOSPITAL, EAST ONE HUNDRED AND FORTY-SECOND STREET, NEW YORK. Under the Charge of the Sisters of the Poor of St. Francis. For the Year 1910. Paper. Pp. 46, with illustrations.

DISEASES OF THE STOMACH AND INTESTINES. By Boardman Reed, M.D., Member of the American Medical Association. Third Edition. Cloth. Price, $5. Pp. 1037, with 112 illustrations. New York: E. B. Treat & Co., 1911.

ANNUAL REPORT OF THE SURGEON-GENERAL OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE OF THE UNITED STATES. For the Fiscal Year 1910. Cloth. Pp. 256. Washington: Government Printing Office, 1911.

SKETCH OF A COURSE OF CHEMICAL PHILOSOPHY. By Stanislao Cannizzaro (1858). Alembic Club Reprints, No. 18. Cloth. Price, 43 cents. Pp. 55. Chicago: University of Chicago Press, 1911.

LITORA ALIENA. By Medicus Peregrinus. Paper. Pp. 78. Price, 50 cents. Boston: W. M. Leonard, 1911.